BRAND EQUITY THROUGH BRAND AWARENESS: MEASURING AND MANAGING BRAND RETRIEVAL

By

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS ii

ABSTRACT vi

CHAPTERS

1 INTRODUCTION AND OVERVIEW 1

Brand Equity in a Product-Market: An Example 1
Brand Equity 2
    The Importance of Brand Equity 2
    What is Brand Equity? 4
    Brand Equity at the Consumer Level 7
    The Competitive Advantage of Brand Awareness 9
Choice Behavior as a Source of Brand Equity 11
Orientation and Structure 13

2 BACKGROUND AND THEORY 15

Brand Choice 15
    Model of Brand Choice 15
    Predictors of Brand Choice 21
    Choice Situations 23
Dimensions of Brand Memory 29
    Episodic Versus Semantic Memory 31
    Implicit Versus Explicit Memory 33
    Stimulus-Based Versus Memory-Based Choice 36
    Recognition Versus Recall 38
The "Structure" of Brand Memory 41
    Associative Links 41
    Categories 43
The "Process" of Brand Memory 48
    Encoding Determinants of Accessibility 49
    Organizational Determinants of Accessibility 50
    Retrieval Related Determinants of Accessibility 52
Summary 58

3 CONCEPTUAL DEVELOPMENT 59

Brand Memory 60
  Associative Structure of Brand Memory 60
  Brand Memory in Evocation and Evaluation 62
  Consumer Memory Used in Brand Choices 63
Associates Influencing Brand Evocation 65
  Situational Factors Affecting Evocation 66
  Evoked Sets as Context-Dependent, Goal-Derived Categories 69
  Retrieval Cues 70
Measures of Brand Accessibility 78
  Brand Accessibility 78
  Asymmetry of Links 80
Manipulating Brand Evocation 82
  Encoding-Retrieval Interaction 83
  Encoding Influences 85
  Brand Accessibility and Brand Choice 87
Summary and Conclusions 88

4 CUING AND MEASURING BRAND RETRIEVAL 90

Background and Purpose 90
Pretests 94
Brand Evocation 99
  Method 100
  Results and Discussion 103
Brand Verification 109
  Method 109
  Results and Discussion 115
Summary 119

5 MANIPULATING BRAND RETRIEVAL 122

Method 125
  Design and Subjects 126
  Manipulations and Stimulus Materials 127
  Dependent Measures 128
  Experimental Procedure 132
Results and Discussion 134
  Brand Verification 134
  Brand Evocation 151
  Brand Choice 162

6 CONCLUSIONS, IMPLICATIONS AND FUTURE RESEARCH 183

APPENDICES

A BRAND EVOCATION MEASURE 200

B ADVERTISING STIMULI 205

C VERIFICATION STIMULUS PAIRS 209

D BRAND EVOCATION - MAIN STUDY 212

E EVALUATION OF ADVERTISEMENTS 226

F BRAND EVALUATION 228

REFERENCE LIST 232

BIOGRAPHICAL SKETCH 248

Abstract of Dissertation Presented to the Graduate School
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Brand equity is defined here as the advantage gained by a product that uses a specific brand name rather than an "unknown" brand name. At the consumer level, brand equity is postulated to be a reflection of two components, specifically, brand awareness and brand evaluation. Most research has focussed on brand evaluations--and little attention has been given to brand awareness. However, brand awareness is a necessary condition for choice by consumers and its role in brand equity deserves greater attention. The research reported here explores the nature of brand awareness and the factors that affect brand awareness.

Brand choice is modelled as having two stages. The first stage, brand evocation (awareness), is both necessary and sufficient for brand choice. The second stage, brand evaluation, is contingent on the brand evocation stage; that is, the evaluation of brands not evoked is irrelevant. Accordingly, attention is shifted from brand evaluation as the appropriate measure of brand equity to brand choice; a brand is said to have equity to the extent that it is "favoured" at choice. That is, brand equity reflects selective evocation and/or favorable evaluation (preference).

A model of consumer memory as an associative network is proposed with the brand forming the focal node, and the brand associates which are links between the brand and other nodes including attributes, benefits, attitudes, product category and situations. Memory is conceptualized as having a different role at each of the two stages in brand choice. While most research into brand equity has considered the accessibility of brand associates given the brand, the focus in this research will be the accessibility of the brand given the associates. That is, while brand-to-associate links underlie brand evaluation, associate-to-brand links are postulated to underlie brand awareness.

The dissertation research comprises three minor studies relating to the measurement of brand awareness, and one major study relating to the management of brand awareness. The first of the three minor studies determines the nature of "cues" (brand associates) used by consumers in the evocation of brands in consumption situations. The second and third studies examined two measures of brand awareness, one a recall measure and the other a response latency measure. The influence of the provision of associates of the brand as cues and how they affect the recall and response latency measure are examined.

The major study tests the proposition that brand awareness in the choice situation is facilitated to the extent that conditions in the response situation match those in the exposure situation.

CHAPTER 1
INTRODUCTION AND OVERVIEW

Brand Equity in a Product-Market: An Example

Your plane soars down toward the coastline and for all the inconvenience of a window seat on the 16 hour journey, you are rewarded with a breathtaking view of the harbour bridge and the distinctive white "sail" structure of the opera house. Flying across the eastern suburbs dotted with bungalow homes, many with a bright blue swimming pool in the backyard, the plane begins its final descent across Botany Bay. Just when you think the plane is about to land on water, you hear the squeal as the wheels touch the tarmac of the runway and then the rumble as the aircraft shudders to a halt. The plane taxis to a skyway as you wait less than patiently with the other 300 odd passengers to get off this sleek, uncomfortable beast. You are tired, overfed and dehydrated--but still excited about smelling the gum trees and seeing some kangaroos and koalas in the outback. You are met by your Aussie friend whose first words are: "G'day mate--you look bushed. Probably could do with a cold one." As s/he leads you to the nearest pub, you are confronted with your first consumer choice as s/he asks "So, what will it be?" What beer do you want to drink?[1]

My guess is that 9 out of 10 North American and British tourists to Australia will choose one well known brand. My guess is that you along with most other English-speaking visitors to

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[1] If Budweiser, Miller, Coors or some other U.S. brand comes to mind, you better try again because U.S. brands have very limited distribution in Australia!

Australia probably chose Fosters. To the extent that the choice is biased towards this one brand reflects the degree to which this brand has equity, at least in this specific product-market defined as English speaking tourists in Australia. It is informative to the purpose of this thesis to explore the nature of the forces that underlie this biased choice which could be considered the source or basis of a brand's equity within this product-market.

Due to the wide promotion of the Fosters brand around the world, the brand has developed a considerable reputation. In effect, the brewers of Fosters, Carlton United Breweries have developed a brand that most would agree has considerable equity. The equity the brand has developed is reflected in the fact that many marketers (and especially brewers) would pay handsomely to gain the brand, Fosters.

Brand Equity

The Importance of Brand Equity

Marketers have become increasingly aware of the importance and value of the "brand name." Tauber (1988) points out that the 1980s saw an unprecedented amount of energy directed toward acquiring, strengthening and extending brands. At the same time, we have seen marketers and marketing academics give considerable attention to the issue of brand equity as evidenced by the MSI sponsored conference on brand equity in 1988 (see Leuthesser 1988). Following this conference, MSI designated brand equity as a "Capital Topic," indicating that it is "a broad, integrative topic that spans the interests of numerous MSI constituencies; work in such an area can be considered a capital investment in marketing research" (Leuthesser 1988, p. 31). The measurement and management of brand equity has remained a central issue as reflected by the fact that it was relisted as a Capital Topic in MSI's *Research Priorities 1990-1992*, and a second MSI conference on brand equity was held in 1990 (see Maltz 1991).

Despite these trends illustrating the importance of brand equity, some have noted that there has been phenomenal growth in the area of unbranded, generic products (Kapferer and Laurent 1988). The success of generic products, which now extends beyond grocery items to durable goods such as televisions in Europe (Kapferer and Laurent 1988, p. 1) seems to suggest a paradoxical trend implying a decline in the importance of brand equity. However, it is clear that despite this trend, there are still at least some segments that value the brand. In addition to brands that have long recognized brand equity (e.g., Coca Cola, Ivory), there are examples of brands in new and established markets that have benefited from establishing brand equity (e.g., Apple computers, Corona beer). Thus, the apparent erosion, in some categories, of the competitive advantage attributable to brand name simply highlights the importance of better understanding the process of establishing, measuring and managing brand equity. In the interests of developing a better understanding of what brand equity is and how it works, this thesis proposes a broader conceptualization and focuses on the consumer behavior phenomena that underlie brand equity.

Despite the MSI's setting "measuring and managing of brand equity" as the priority research topic, most of the work in progress and papers in the area are aimed at *extending* the brand. While brand extension may be considered a vital management issue, particularly in view of firms' need to contain costs and increase markets (Tauber 1988), it may also be partly responsible for the erosion of competitive advantage attributable to brand equity. That is, the practice of extending brands may have led to the dilution of equity in the original brand (Farquhar 1989). Attention has been directed to the exploitation of brand equity rather than to its source and development, which are important areas for research enabling appropriate measurement, nurturing and management of brand equity. The important issue of how brand equity provides a competitive advantage seems to be understood only implicitly and tends to be neglected as a topic worthy of further investigation. This thesis challenges the implicit understanding of how brand equity works at the consumer level and directs attention to the measurement and management of at least one contributor to brand equity.

What is Brand Equity?

The first and most fundamental question to address is "What is brand equity?" The concept of "brand equity" is generally considered to refer to that part of the value of a product that is attributable to the brand name. From a managerial point of view, Farquhar (1989) defines brand equity as the "'added value' with which a brand name endows a product" (p. 24). More generally, it has suggested that brand equity be considered from the perspective of three separate entities: firm, trade and consumer (see Farquhar 1989; Leuthesser 1988). From the firm perspective, brand equity is incremental cash flow arising from use of the brand name. From the trade perspective, brand equity is leverage (in terms of acceptance and distribution) arising from using the brand name. From the consumer perspective, brand equity is generally considered to be something to do with "value". Farquhar (1989) considers brand equity to be reflected by "attitude strength" (p. 27). Shocker and Weitz (in Leuthesser 1988, p. 2) consider brand equity from the consumer perspective to arise from "unexplained" utility and a differentiated, clear image, which results in "loyalty" that provides a sustainable advantage.

Although recognizing and measuring how brand equity arises at the consumer level is very important, the tripartite conceptualization proposed tends to confuse brand equity as an asset value at the firm level, a lever offering competitive advantage at the trade level, and a consequence of behavior at the consumer level. Specifically, the value of the brand as an asset and as a lever at the firm and trade levels, respectively, arise as a result of the (perceived) effect of the brand name on consumers' behavior. Consumer behavior cannot be said to reflect brand equity; it is what *creates* brand equity.

The term "equity," as used in business refers to a balance sheet item and is a reflection of the excess of asset value over liability value. However, brand equity is typically used to refer to an income concept: "incremental cash flow resulting from the product with the brand name versus that which would result without the brand name" (Leuthesser 1988, p. 2). The distinction is not overly important as income statements will be reflected in balance sheets. Consequently, brand equity (like other kinds of equity) is the value of an asset in excess of investments in that asset and reflects the incremental value that accrues to the firm or trade resulting from marketing a brand versus an identical, non-branded product[2]. That is, the brand is an asset, and arguably, one of the most important assets of the firm (Kesler 1987, p. S-4; Tauber 1981, p. 36, 41). In this sense, most brands can be said to have at least some equity; however, some brands have considerably more equity relative to other brands. This notion of relative brand equity may be considered to reflect relative competitive advantage.

The notion of "brand equity from the consumer perspective" as used in the literature appears to overlap considerably with existing concepts such as utility and/or perceived brand value. Therefore, what is loosely termed brand equity from the consumer perspective is better considered to be perceived brand value. Tauber (1988, p. 26) notes that "marketers often use the terms brand equity, brand image, and brand personality interchangeably." However, this usage of these various terms as synonyms has been unfortunate and arguably inappropriate.

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[2] The reference against which brand equity should be measured is an identical, unbranded product. This is not always realistic and partially accounts for some of the difficulty in valuing a brand's equity. In practical terms, a brand is said to have equity to the extent that it has value beyond other "lesser" brands.

Therefore, I make an important distinction between what brand equity is at the marketer level, and how it is manifested at the consumer level. Brand equity is the extra value that accrues to marketers as a result of associating the brand with the product. Despite the complexity of accounting for and valuing brands (see Farquhar 1989, p. 25), it is noteworthy that examples of brand equity cited in the literature are a consequence of consumer behavior benefiting the brand. For example, brand equity is evident when the rate at which consumers choose the branded product over an identical, but unbranded, product. For instance, Farquhar (1989, p. 25) reports the following examples in describing the valuation of brand equity: "Marriott estimated that adding its name to Fairfield Inn increased occupancy rates by 15%. In matched product tests with corn flakes cereal, choice increased from 47% when the brand name was not known to 59% when the Kellogg's name was identified." These examples clearly demonstrate that brand equity reflects a higher probability of choice. Berry (1988, p. 16) reports another clear demonstration of brand equity: "A couple of years ago in England, Hitachi and G.E. jointly owned a factory which made televisions for both companies; the only difference was the name on those sets. The Hitachi sets sold for a $75 premium over the G.E. sets--and they sold twice as many." The willingness of customers to pay a premium for an identical product that differs only in terms of brand and price from an alternative essentially reflects a higher probability of choice, if it is assumed that price and probability of purchase tradeoff as is specified in the traditional notion of a downward sloping demand curve.

In effect, my argument is that brand equity is a function of choice (amongst other consumer behaviors) at the consumer level, and not a function of perceived value--or at least not a function of brand value alone. The equating of brand equity which accrues to the marketer (be it manufacturer or trade) with brand value (as perceived by the consumer) is unfortunate as it implies that brand equity is simply a function of the perceived value of the brand. It is argued here that consumer choice behavior is a critical element necessary for the development of brand equity, but it is further argued that brand choice behavior is not driven by the perceived value of the brand alone. For perceived value to have any influence, it should be apparent (indeed, it tends to be assumed and often overlooked) that the brands must "come to mind" in order to be compared and evaluated. At least part of the equity of a brand can be attributed to the extent that certain brands consistently come to mind to the exclusion of other alternatives. For instance, visitors to Australia, when asked what beer they would like, would be highly likely to think of Fosters given its wide distribution and promotion around the world. They have no way (at this stage) of evaluating alternatives for two reasons: (1) they do not know what alternatives are available; and (2) they are not aware of the differences among the different beers.

Brand Equity at the Consumer Level

The central thesis of this paper is that brand equity arises from consumers being more likely to be aware of some brands, in addition to possibly preferring some brands over others. In effect, brand equity is considered to be a function of both brand awareness and brand preference. Many researchers recognize that brand equity at the consumer level arises from both awareness and preference, but they give minimal attention to brand awareness. Farquhar (1989) points out that producers brand their products "to make their products *easier for consumers to remember*, to differentiate their products from those of competitors...[and] to enhance a product's perceived value" (p. 24, italics added). However, he then goes on to focus on building a strong brand at the consumer choice level on the basis of value-related elements only: positive brand evaluation, accessible brand attitude, and consistent brand image[3] (p. 29). Tauber (1981) argues that a brand confers value to the marketer in terms of "the *consumer awareness*, good will, and impressions conveyed by its brand name" (p. 37, italics added). Brand equity provides a position of strength from which to launch extensions by providing "*immediate consumer awareness* and impressions communicated by the brand" (Tauber 1988, p. 28, italics added). Similarly, Aaker and Keller (1990, p. 27) point out that brand extensions "take advantage of *brand name recognition* and image" (italics added).

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[3] Farquhar (1989) considers "consistent brand image" to refer to easily remembered distinguishing characteristics. Although this notion involves some element of memory, it is nevertheless different from memory for the brand name.

Despite these definitions of brand equity, brand awareness receives little more than lip service in terms of its contribution to brand equity. Most researchers focus exclusively on the factors underlying the brand image, reputation and evaluation, as in Farquhar (1989) discussed previously. Farquhar, Herr and Fazio (1990) argue that "brand equity from a consumer perspective is reflected by the increase in the strength of associations an individual has for a product using the brand" (p. 856) suggesting that brand equity is reflected at an individual consumer level by the associations evoked by the brand. Shocker and Weitz (in Leuthesser 1988) define brand equity as "a function of associations, in the consumer's mind, with the brand name" (p. 2). Accordingly, most research devoted to brand equity and the closely related topic of brand extension has examined brand evaluations, preferences, image and/or other brand associates (e.g., Aaker and Keller 1990; Broniarczyck 1990; Farquhar et al. 1990; Herr, Farquhar and Fazio 1990; University of Minnesota Consumer Behavior Seminar 1987). As noted earlier, the use of terms such as brand image, brand personality and brand reputation as synonyms for brand equity at the consumer level is unfortunate. The reason is that such terms completely ignore the issue of brand awareness.

Brand equity has been operationally defined at the consumer level in the previous section as a function of choice of a branded product over an unbranded product, ceteris paribus. That is, a brand is said to have equity to the extent that consumers are more willing to purchase the branded product over an identical, unbranded product. At the market level, the "added value" of the brand reflects higher turnover (i.e., more consumers or heavier consumption of the brand) and/or higher margins (i.e., the ability to charge a premium over an identical, unbranded product). Brand equity arises at the consumer level from choice of the brand over an unbranded alternative and reflects (i) facilitated awareness, and (ii) greater preference.

The Competitive Advantage of Brand Awareness

Jim Bell, director of new ventures at Simplicity Pattern Co., succinctly identified the competitive advantage of a brand or trademark as "the one thing your competition can't knock off" (Kesler 1987, p. S-4). That awareness of the name itself is valuable is reflected in the strength of brands over time despite changes in quality, positioning, evaluations and so forth. A study by Trout and Ries (reported by the *Wall Street Journal* 1991, p. B1) found that 20 of today's top 25 leading brands--including Lipton, Ivory, Gillette, Goodyear and Coca-Cola--were also among the top 25 most popular in 1923. One could argue that the changes in quality, positioning, and image over time ensured preservation of the consumer franchise; however, even occasional "bad" product decisions do not appear to have led to the demise of top brands (e.g., Coca-Cola's introduction of New Coke; Ford's Edsel).

The burgeoning business of licensing brands (see Kesler 1987; Tauber 1988) is further evidence of the value of brand awareness. Many licensing deals rely on instant recognition of the brand. It is noteworthy that brand licensing is not always constrained to related products (e.g., Coca Cola telephones, Budweiser t-shirts, Coors waterskis and Burger King erasers). Such deals not only trade on the awareness of the brand, but are designed to boost brand awareness (Kesler 1987, p. S-1).

Given the demonstrated value of awareness, it is useful to understand the nature of the sustainable competitive advantage offered by investment in brand awareness. The first brand to achieve substantial awareness may win a unique association with the product category. From the point of view of preference, managers and researchers may define this as "owning" the category. That is, the first brand in the category sets the standard and defines the characteristics of the category (see Carpenter and Nakamoto 1989). However, more subtly and arguably more powerfully, the first to establish awareness is also more likely to be spontaneously evoked at the mention of the category (e.g., at the mention of computers, IBM is likely to come to mind spontaneously) to the point that the category and the brand become synonymous (e.g., Kleenex for facial tissue and Xerox for photocopies). These unique associations from category to brand are difficult if not impossible for other brands to overcome.

A second and related competitive advantage of high brand awareness is that the investment to maintain brand awareness is likely to be considerably lower than that required to establish it. Hence, later entrants are required to spend considerably more than the "top-of-mind" brand in order to achieve a similar level of awareness. The strength of established awareness is reflected in the persistence of awareness for brands even after they have been removed from the market (e.g., Datsun, General Electric home appliances).

The third competitive advantage of high brand awareness is a function of memory interference, in which evocation of one brand in response to a cue may reduce the probability of evocation of other brands (e.g., Alba and Chattopadhyay 1985a). That is, recall of one brand interferes with recall of other exemplars likely to be associated with the same cue. A related argument could be based on the notion that evoked sets are generally thought to be limited in size (e.g., Alba, Hutchinson and Lynch 1991; Hauser and Wernerfelt 1990; Howard and Sheth 1969).

Consequently, the inclusion of one brand reduces the probability of selection of other brands by reducing the number of "spaces" left in the evoked set.

Choice Behavior as a Source of Brand Equity

How is it that the brand name is worth some added value over and above the value of the product itself? In other words, why did some brewers (e.g. Allied Lyons in the U.K. and Carling O'Keefe in Canada) agree to take on the Fosters brand rather than attempt to build their own new brand? Basically the answer must be given in terms of biased choice behavior: consumers are more likely to buy this brand over others, and/or are willing to pay a premium for this brand.

Typical accounts of how equity arises at the consumer level suggest that it is the positive images and associations that are evoked by the brand that lead to it being favored over other alternatives in choice situations (Farquhar 1989; Tauber 1987). For instance, Fosters has a very strong Australian positioning. Consequently, in evaluating Fosters versus other beers, the brand, Fosters, is likely to evoke Australian related associations--most of which are likely to be very positive amongst North Americans and (to a lesser extent) Britons. In product-markets within North America and Britain, it may be this factor that contributes to the favored choice of Fosters over alternatives.

However, the scenario described at the beginning of this chapter was chosen specifically to highlight an alternative basis of influencing choice. In the situation, it is unlikely that the brand's associates that were evoked were the major influence in biasing brand choice. Indeed, other brands that could be considered would also generally share Fosters' association with Australia. Instead of the associations evoked by the brand, it is the fact that the brand was likely to be the only one that came to mind. In effect, it was chosen because it was selectively evoked, not necessarily because of any positive associations with Australia or a favored evaluation relative to alternatives.

Brand equity arises from consumer behavior because a brand is "well-known". That is, it is meaningless to talk of the equity of a brand that is unknown. However, the term "well-known" confounds "awareness"[4] with the associates of the brand (e.g., reputation, image, etc). It is critical that this confound be recognized and that attention be given to the value of high awareness in addition to the value of having a well-established reputation or image. Taking the Fosters brand, it may be argued that the brand enjoys favored evocation in a variety of product-markets aside from the one mentioned in the example. However, in these other product-markets, the influence of favored evocation may not be as apparent and, indeed, may only contribute partially to favored choice. For instance, a person walks into a bar in the U.S. which specializes in imported beers. As the person starts to think about foreign countries, Australia comes to mind, and very closely behind it, Fosters. In the meantime, the person has also thought of Mexico (Corona), Canada (Molson) and Germany (Becks). At this point, the associations evoked by Fosters may or may not lead to an evaluation process that results in Fosters being chosen over the alternatives in the evoked set. Nevertheless, given that drinking imported beers may be characterized as variety seeking behavior, over time Fosters will gain favored choice over unevoked alternatives such as Grolsch, San Miguel and Youngs. Consequently, biased choice, which is the basis by which brand equity arises, will be a function of both biased evocation and favored evaluation.

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[4] Brand awareness in this paper refers to awareness at a specific point in time rather than knowledge of the brand. That is, the term is used to refer to situational awareness, not absolute awareness (see Alba and Chattopadhyay 1985, p. 340).

Orientation and Structure

In this thesis, the existing notion that brand equity is a function of the associations that are evoked by a brand (e.g., Farquhar 1989; Tauber 1987) is challenged and extended to include the contribution of awareness and preference. In particular, it is argued that brand equity depends as much on favored evocation of brands as on favorable evaluation of brands. That is, brands that are more consistently included in the evoked set will enjoy greater equity than brands which do not enjoy selective evocation. It should be noted that this advantage is independent of any advantage that may be attributed to brands in terms of the nature of the associations that are evoked by the brand. Indeed, the value of associates evoked by a brand is entirely contingent on that brand being included in the evoked set. For instance, the beer connoisseur in the import bar may have a particularly favorable image of Fosters, but if the brand is not evoked, the value of this favorable image is zero.

The notion forwarded in this thesis is that favored choice depends on both favored evocation and favored evaluation of evoked brands. However, it is difficult to suggest that either evocation or evaluation is more important. Evocation is logically necessary for choice--and may even be sufficient for choice as in the example of the visitor to Australia in which the evoked set likely consisted of only one brand. On the other hand, evocation does not always guarantee favored choice--in particular, evocation may be stable and the evoked set may always consist of two brands, but one is always favored relative to the other.

In Chapter 2, literature is reviewed with a focus on brand choice and brand awareness. In Chapter 3, a conceptual framework is developed that extends the notion suggested here, namely, that biased brand choice is a function of both higher awareness in addition to (or even without) favored evaluation. In Chapters 4 and 5, two studies are described that explore and test the formal propositions and hypotheses developed in Chapter 3. The first study is a preliminary study aimed at identifying and then testing the role of brand associates in facilitating brand awareness in consumption and purchase situations. The second study manipulates the cues present at encoding to demonstrate that brand awareness can be facilitated if the cues present at encoding match those present at retrieval.

CHAPTER 2
BACKGROUND AND THEORY

Brand Choice

Brand equity is defined as the value added arising from the use of a brand name. At a consumer behavior level, brand equity is considered to arise as a function of brand choice. However, in contrast to most conceptualizations of the role of consumer behavior in supporting brand equity, it is suggested here that both brand awareness and brand preference are important components that may contribute to brand choice, and through its influence on choice, influence brand equity. That is, brand choice is not influenced by favorable brand evaluations alone; indeed, brand choice may be influenced by selective brand evocation alone, or by evocation (selective or otherwise) coupled with favored brand evaluation. The model of choice that is being proposed is considered in more detail in the following.

Model of Brand Choice

In this section, a model of brand choice is developed which more fully highlights the importance of both brand awareness and brand preference in the consumer choice process, and literature is reviewed which highlights the importance of both awareness and preference in brand choice.

Following a variety of researchers, the consumer decision process is conceptualized as a staged or phased decision choice process comprising a non-compensatory restriction of the choice set followed by some more compensatory evaluation of the alternatives contained within the choice set (e.g., Bettman and Park 1980; Fader and McAlister 1990; Lussier and Olshavsky 1979; Nedungadi 1987; Park 1978). Specifically, consumer brand choice is modeled as a function of (1) evocation and (2) evaluation contingent on evocation (see Figure 2-1). Brand evocation is *necessary* for brand choice--and in instances where the evoked set comprises only one element, may be sufficient for brand choice. On the other hand, brand evaluation is contingent on brand evocation--and the evaluation of unevoked brands is irrelevant, no matter how positive. Consequently, brand evocation is clearly critical to understanding brand choice, but tends to have been neglected, with most consideration being given to brand evaluation.

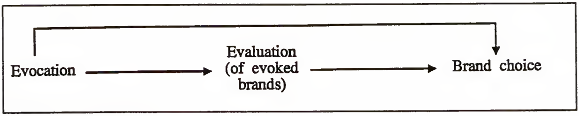

Figure 2-1: Brand Choice

The basic model of choice as a two-stage, contingent process corresponds with that adopted by Baker et al. (1986) and Nedungadi (1987) who conceptualized the brand choice process as comprising two sequential stages: evocation and evaluation. In turn, this conceptualization is based on the older proposal by Wright and Barbour (1975) who suggested that the consumer decision making process comprises three stages: (1) identifying or generating a pool of alternatives, (2) reviewing relevant information in memory, and (3) applying a decision rule. In Nedungadi's conceptualization, the evocation stage corresponds most closely with the first stage of Wright and Barbour's (1975) typology, while the evaluation stage incorporates both the second and third stages of their typology.

The specification of an alternative generation stage corresponds with Howard and Sheth's (1969) notion of an evoked set (see also Howard 1977). However, there have been a number of researchers that have chosen to use alternative terms in place of the evoked set. Alba and

Chattopadhyay (1985a) distinguish between the knowledge set (all brands "known" or recognized), the consideration set (all the brands that would be acceptable), the retrieval set (all brands recalled in a particular choice situation), and the evoked set as "consisting of the brands a consumer finds acceptable *and remembers*" (footnote 1, p. 340, their italics). Nedungadi (1987) uses the term consideration set in referring to what is perhaps best construed as a modification of Alba and Chattopadhyay's (1985a) retrieval set in that it contains brands that are retrieved and/or "perceived" in the external environment. Nedungadi (1990) uses the term, consideration set, to refer to what is defined as an evoked set in that it contains brands that are retrieved and acceptable. Hauser and Wernerfelt (1990) point out that numerous conceptual and operational definitions of evoked sets, relevant sets and consideration sets have been used.

For the purposes of this thesis, I will be using the original definition of evoked set due to its appropriateness in describing the set of brands that "come to mind" (Howard 1977, p. 32). It is assumed that awareness refers to just those brands retrieved at a specific point in time rather than all brands known to the consumer. Alba and Chattopadhyay (1985a) distinguish between these two, using the terms situational awareness and absolute awareness respectively. The definition of an evoked set as used here corresponds most closely with Alba and Chattopadhyay's (1985a) retrieval set and Nedungadi's (1987) consideration set.

In using the term, evoked set, there are three points that need to be highlighted about its usage in this thesis. For the purposes of this thesis, it will be assumed that brands that are not acceptable may be included in the evoked set, but will not affect the evocation stage and will be typically eliminated at the evaluation stage (see Nedungadi 1987, p. 20). It should be noted that if unacceptable brands are consistently evoked, this limits the number of acceptable alternatives that can be evoked given the tendency for evoked sets to be constrained in size (see Hauser and Wernerfelt 1990, p. 394) and therefore limits the chances of evocation of other more acceptable alternatives. However, the only case in which the evocation of an unacceptable alternative is truly significant is the case where it is the only alternative evoked. For instance, in the example at the beginning of the first chapter, most people would think of Fosters, but some may not consider it acceptable. However, this is likely to be a special case in which the consumer's choices are to choose the unacceptable alternative (or the most acceptable if the evoked set is composed entirely of unacceptable alternatives), or to choose not to consume. Interestingly, if the consumer chooses to consume the unacceptable alternative, it may be argued that the brand has equity that is attributable to an evocation advantage *despite* negative associations evoked by the brand.

A second point to note in the adoption of the term evoked set is that this does not imply that the set of brands is static, but instead, refers to what Alba and Chattopadhyay (1985a) would call the retrieval set--albeit situationally defined (see Alba, Hutchinson and Lynch 1991; Nedungadi 1990 for similar views). That is, the alternatives included in the evoked set are likely to be be different depending on the choice situation (Alba et al. 1991).

And finally, virtually all conceptualizations of sets of brands are based on the notion that brands are recalled from memory. In general, there is limited consideration of memory in formation of a set of alternatives in choices where the brands are present, and do not have to be recalled. The nature of such decisions and the role of memory where the brands are present will be considered later in this chapter. In the meantime, the use of the term evoked set may be assumed to refer to situations where brands must be recalled from memory.

Nedungadi (1987) suggested that "in order to obtain a more complete picture of the choice process, the stages of brand awareness and brand evaluation need to be examined together" (p. 4). I suggest that brand evocation can be usefully considered in isolation from brand evaluation; however, I further believe that brand evaluation cannot be usefully considered in isolation from brand evocation. The reason for this is that brand evocation is a logically necessary condition for choice. Brand evaluation, on the other hand, is contingent on the evocation stage. It seems likely that it is this fact that partially accounts for the failure of attitudes to account for as much behavior as might be hoped (e.g., Fishbein and Ajzen 1975). If an alternative is not evoked, then the attitudes towards that alternative are irrelevant, even if they are extremely positive and extremely strongly held. Attitudes and awareness measures as predictors of choice are discussed in more detail in the next section.

Many levels of consumer choice can be modeled as being separate decisions that include two more basic stages--the first being the generation of alternatives, the second being an evaluation of the alternatives. For instance, this basic model applies whether the decision refers to product category, brand, product form, or product quantity. I will be focusing on the brand decision as one of the more interesting and fundamental applications of the evocation stage.

An application that has tended to receive more attention in memory research is the evocation of attributes and bases of evaluation within the choice process. For instance,, work by Biehal and Chakravarti (1983, 1986) has addressed the accessibility of information that can be used in the evaluation stage. Hence, in a sense the evaluation stage can itself be broken down into an evocation (of bases of evaluation) and evaluation stage--the latter consisting of evaluation of brands on the basis of accessible information. Similarly, Feldman and Lynch (1988) and Lynch, Marmorstein and Weigold (1988) have considered the influence of accessibility of information. Nevertheless, it seems likely that at least some of the principles that might be used to describe evocation of brands could be used to describe evocation of alternatives in other stages of the consumer decision making process.

It should be further noted that the notion of evocation and evaluation is not diminished by the fact that many consumer decisions may not comprise the neat stages of choice that have been suggested in the numerous models mentioned above. For instance, it seems that in terms of "brand choice," many consumers may be generating evoked sets that contain brands as well as alternative categories. For example, when thinking about what to do tonight--alternatives such as go to a restaurant, see the movie *Robin Hood*, or stay at home and watch *LA Law* and drink some Buds may comprise the evoked set. What comes to mind and how is important. What is interesting is that if this is how consumers make decisions, this has some serious implications for much of the research on evaluation, which has typically assumed that people generate evoked sets that are category specific. Some recent work has begun to consider the possibility of evaluation of alternatives that are not specific to one category (e.g., Johnson 1984, 1988). The fact that non-comparable alternatives may be evoked is not directly considered in this thesis, but its major implications would appear to be at the evaluation level.

The two-stage decision process comprising evocation and evaluation neglects consideration of the "learning" stage that is a first step in consumer choice processes. That is, consumer choice can be conceptualized as comprising both a learning stage and a decision making stage, with the latter stage using the information that has been acquired in the former stage. It is noteworthy that the processes underlying encoding and retrieval are parallel in a number of respects. In particular, the notion that consumer choice is a contingent process requiring awareness (of alternatives) followed by evaluation of those alternatives of which the consumer is aware sound very much like the classic hierarchies of effect (e.g., Lavidge and Steiner 1969; Ray 1973). However, hierarchies of effect refer to the *learning* or encoding stage that precedes (and is necessary for) consumer choice. In contrast, here, the focus is on the decision making stage and I am interested in the learning stage only to the extent that it affects the decision, and especially the brand retrieval stage. For a comprehensive review of consumer learning, see Hoch and Deighton (1989).

Predictors of Brand Choice

Much research has focused on the relationship between attitudes and behavior (e.g., Fishbein and Ajzen 1975). It tends to be held as a truism in consumer research that brands with which more positive attitudes are associated are more likely to be purchased. However, many researchers now recognize that this relationship is less than might be hoped, with attitudes accounting for only about 30% or less of the variance in behavior (e.g., Fishbein and Ajzen 1975). Consequently, attention has been dedicated to determining why the relationship is not stronger, with attention being directed to the factors that may moderate the attitude-behavior relation. In both the general psychology literature and the consumer behavior literature, situational factors are seen as moderating the relationship between attitude and behavior (e.g., Fazio 1986; Lutz 1991). In the consumer behavior literature, the influence of situations on attitudes has been modeled explicitly, and encouraging results suggest that choice is better predicted by attitudes that are situation specific (Berkowitz, Ginter and Talarzyk 1977; Miller 1975; Miller and Ginter 1979). A second approach to explaining the failure of attitudes to account for behavior is to posit variables that moderate the attitudinal influence such as accessibility of the attitude (e.g., Berger and Mitchell 1989; Fazio, Powell and Williams 1989).

While considerable variation in choice may be attributable to attitudinal factors, choice of the preferred brand necessitates that the brand at least came to mind as a potential alternative. Hence, the logically necessary, and therefore, primary means by which a brand may have value is that it tends to be highly likely to be evoked at brand choice. The necessity of evocation and its importance independent of preference has been demonstrated by Nedungadi (1987, 1990), who showed that unobtrusive manipulations influencing the composition of the evoked set can affect choice without altering brand attitudes.

A number of researchers have demonstrated the importance of evocation relative to brand preference in brand choice. For instance, Axelrod (1968) and Nedungadi and Hutchinson (1985) demonstrated that top of mind awareness (i.e., brand recall at a product category prompt) is more strongly correlated with brand choice than is brand attitude. Haley and Case (1979) report a similarly strong relationship between awareness and actual choice and further postulate that brand awareness may be a more important predictor of purchase than brand attitude. This notion is supported by Hauser (1978) who reports that probability of inclusion of the brand in the evoked set accounts for more variation in brand choice than does brand attitude. Nedungadi (1987, 1990) has demonstrated that brand choice can vary as a function of the evoked set while brand evaluations are unchanged. Finally, Baker and Lutz (1988) and Alba and Hutchinson (1987) have postulated that choice may be based on first to mind in at least some cases; Hoyer and Brown (1990) have demonstrated that brand awareness is a dominant choice heuristic when making a low involvement choice between one known brand and two unknown brands.

Given the impressive predictions based on brand evocation, and the amount of effort dedicated to brand evaluation, I suggest that brand evocation is worthy of more attention. However, it appears likely that brand evocation is far more volatile than brand evaluations (see Moran 1990, p. 15 for a similar view). This might imply that evocation is not going to be a good measure of brand equity, which is presumably a reflection of inertia rather than variety in brand choice. However, investigation of evocation can be justified on the basis that the studies by Axelrod (1968) and Haley and Case (1979) clearly suggest that evocation is closely related to brand choice, and arguably, more so than brand evaluation. Furthermore, the extent to which brand evocation is stable is likely to be very closely related to brand equity, given that evocation is often more closely related to choice than are brand attitudes.

Choice Situations

Situation has been recognized as one of the important determinants of behavior in general, and of particular relevance in this thesis, is an important influence on consumer decisions. A number of consumer researchers have pointed out the importance of considering situational influences on consumer choice behavior (e.g., Belk 1974, 1975a, 1975b; Kakkar and Lutz 1980; Lutz and Kakkar 1975; Lutz 1980). Before exploring further the nature of situational influences on consumer behavior, it is useful to examine a typology of consumer behavior that identifies a variety of classes of consumer situations.

Purchase versus consumption situations

Hansen (1972) developed a useful typology of consumer situations based on his model of the consumer decision process. He identified the consumer decision process as comprising three stages: exposure, deliberation and response choice. He further discriminated among exposure situations by describing (a) acquisition (active learning) situations; (b) forced learning situations; and (c) experience formation (incidental learning) situations. Different deliberation situations are not easily discriminated, so Hansen refrained from making any finer grained distinction in this category. Finally, he proposed that response choice situations could be classified as communication, purchase and consumption situations.

A number of the consumer researchers who have considered the influence of situation on consumer behavior have referred to Hansen's typology, but typically only refer to the distinction between the response choice situations--namely, communication, purchase and consumption (e.g., Belk 1975a; Dickson 1981; Lutz 1980). However, they discuss this distinction as if it applies to all consumer situations, and in particular, treat communication situations as being "exposure to communication" situations. However, as Hansen intended the specification to refer to *responses*, communication response choice situations refer to the *consumer's* communications about a product (e.g., word of mouth, explicit cognitive responses, complaint behavior and expressions of satisfaction).

Nevertheless, this misinterpretation actually highlights a potential extension of Hansen's definition that is useful for framing consumer behavior and highlights important directions for consumer research focus. Specifically, if one crosses Hansen's response choices with his choice process dimension, and assuming that the most critical deliberation takes place in the response choice situation, a three by two matrix is derived as given in Table 2-1. The exposure dimension can be considered to describe situations in which 'learning' can potentially take place. The deliberation and response dimensions jointly describe 'decision' situations. Examples of each type of situation are given in the cells.

Table 2-1: Consumer Situations - Decision Stage by Experience

Situation	Exposure	Deliberation & Response
Communication	advertisement, opinion leader	considering, selecting and executing a word of mouth response
Purchase	POP display, prior purchase	considering, selecting and executing a brand purchase response
Consumption	packaging, prior consumption	considering, selecting and executing a brand consumption response

The typology that results is particularly useful in identifying a number of relevant consumer situations. Marketers, academics and public policy makers can consider each situation in terms of their own specific objectives. In addition to giving some extra insights into the range and nature of marketing relevant situations in which consumers operate, the construction of this matrix highlights some of the gaps or biases in our understanding of the *decision* situation. In the following, discussion will be limited to purchase and consumption decision situations as the only ones that directly affect brand choice. Some points that arise out of considering the purchase versus consumption choice situations are addressed in the following.

First, both the purchase-response and the consumption-response situation represent a "hybrid" learning and decision situation. Specifically, what a consumer is exposed to in today's purchase or consumption situation can affect tomorrow's purchase or consumption response (as well as today's, of course). This is particularly relevant if consumers tend to repeat previous behavior in subsequent situations.

Second, the situations in which information is encoded (i.e., the exposure situation) and the situations in which information is retrieved (i.e., the response situation) may be considerably separated in time. This corresponds with the call by many researchers to recognize the time lag between encoding and retrieval (e.g., Baker and Lutz 1988; Cobb and Hoyer 1985; Keller 1991a; Sawyer and Ward 1979).

Third, from the point of view of marketing activities, the marketer can directly manipulate behavior in the purchase situation, but can only indirectly influence behavior in the consumption situation. In "direct" manipulation of behavior in the purchase situation, the marketer can use situational cues such as promotional banners, shelf space, end aisle displays, shopping cart signage and other point of purchase promotional devices (without discounting) to facilitate brand retrieval (Moran 1990). The marketer can use discounts/coupons and promotions as central and peripheral cues respectively, to encourage a favorable evaluation (Inman, McAlister and Hoyer 1990; Wilkinson, Mason and Paksoy 1982). These forms of direct manipulation typically are considered more tactical than strategic; that is, effects on evocation and evaluation are not necessarily expected to persist. In "indirect" manipulation of behavior in the consumption situation, the marketer must rely on advertising (prior communication situations--see Cobb and

Hoyer 1985), and perhaps to a lesser extent, promotions (prior purchase situations) and product trial (prior consumption situations) to favorably influence both evocation and evaluation.

In general, considerable attention has been directed to ways of influencing product evaluations in a later response situation (see Baker and Lutz 1988); however, very little attention has been given to the indirect manipulation of evocation in the consumption situation. Typically, most of the attention has been on the situational factors in the purchase situation that influence inclusion of a brand within the evoked set. This thesis will address this gap by addressing the strategy of ensuring brand evocation in a situation such as the consumption situation.

Ultimately, the marketer must ensure that his/her brand is chosen in both the purchase and the consumption situation. If not chosen in the purchase situation, the brand is not "available" in the consumption situation. If the brand is chosen in the purchase situation, but is not chosen in the consumption situation, then it will sit on the consumer's shelf gathering dust, and a repeat purchase is unlikely.

The importance of the consumption situation to marketers has been relatively well recognized, perhaps because the consumption (or usage) situation is where the consumer sates his/her "needs", "wants" and "desires," and the marketing concept stipulates that marketers should aim to sell what the consumer needs rather than sell what the producer makes (e.g., Fennell 1978). Even more importantly, consumption situations may be particularly useful in identifying consumer behavior patterns. Srivistava has given considerable attention to the notion of usage situation as a useful segmentation variable in the definition of product-markets (e.g., Srivistava 1980; Srivistava, Alpert and Shocker 1984; Srivistava, Shocker and Day 1978).

Situational choice

An important issue to address is that if choice can be shown to vary by situation, why is it important to consider in the measurement and management of brand equity? That is, brand equity is characterized by "inertia," not by variation in consumer behavior. The reason is two-fold. First, while choice does vary by situation (e.g., Belk 1974; Sandell 1968), it seems likely that choice is relatively stable each time a particular situation arises. The important features of a situation are likely to be fairly stable, and presumably it is these features that serve to cue brand evocation and determine attribute weights for evaluation of alternatives. Coupled with the fact that many consumer brand choices are likely to be relatively low involvement, this stability leads the consumer to adopt fairly habitual behavior patterns for brand choice (Kassarjian 1978, 1986; Olshavsky and Granbois 1979). That is, reinstatement of the situation and the need to make a brand choice will reinstate the "mental conditions" prevailing on the previous occasion and will likely lead to the same or similar result. Indeed, the consumer may attempt to retrieve what brand was chosen in the same situation previously. Hence, a brand may be said to have equity if the brand is consistently chosen in specific situations.

Second, some consumer behavior situations may account for a large proportion of the consumption in a particular product category; consequently, a brand that enjoys selective evocation in such a situation can enjoy a large share of market. A related notion is that there may be features across situations that tend to cue a particular brand--for instance, in addition to other sports, Gatorade may be evoked following any physically exerting activity such as mowing the lawn, moving furniture, etc. The concept here is clearly related to the substitution-in-use literature, and the notion that product-markets are defined by usage situation (Day, Shocker and Srivistava 1979; Srivistava 1980; Srivistava et al. 1978, 1984; Ratneshwar and Shocker 1988, 1991). A brand that is selectively evoked by a usage situation will enjoy a large share of that "product-market". If it is selectively evoked across a number of product-markets, its equity will be considered to be even greater.

Ultimately, a brand will gain greater equity if it is able to ensure that it is chosen selectively across a wide range of situations. For instance, Coca Cola enjoys this kind of favored evocation in that anyone even thinking of getting something to drink tends to think of the soda category. It is highly likely that Coke will be evoked in response to the cue, "sodas." It is interesting here to compare the degree to which selective evocation leads to higher purchase of Coke in the U.S. versus other countries (such as in Europe) where sodas are drunk far less frequently. Assuming that the amount of liquid drunk per capita is the same in the U.S. and Europe, Coke clearly benefits greatly in the U.S. from being so likely to be evoked in response to the cue of "need for a drink". The equity results from a two-stage link: the need for a drink is more likely to evoke the soda category which in turn is highly likely to evoke Coke

Examining now the issue of situational choice, there are two mechanisms by which situations may influence choice. Specifically, the situation may influence evocation or evaluation. Most research to date has examined the way in which situational influences affect evaluation (e.g., Berkowitz, Ginter and Talarzyk 1977; Miller 1975; Miller and Ginter 1979). In particular, Miller (1975; Miller and Ginter 1979) found that attribute weights in a multiattribute model of attitude varied between situations, and that the situationally measured attitudes better predicted brand choice than did overall attitudes. In the prediction of past choice of a consumer durable (automobiles), Berkowitz et al. (1977) found that situation specific attribute ratings, coupled with consideration of proportion of usage within those situations, improved prediction over the traditional (overall attitude) model. Additionally, Warshaw (1980a, 1980b) has shown that overall behavior is better predicted by situationally derived behavioral intentions. It should be noted that this model *implies* that behavioral intentions and choice vary due to situational influences on brand evaluation; however, the reason for choice varying across situations may be due a situational effect on evocation and/or evaluation.

In addition to situational influence on evaluation, it would appear likely that situations are likely to influence evocation. In particular, certain situations constrain the evoked set to only relevant or appropriate brands. In the first chapter, the evoked set of beers that one might expect to be available at a bar in Australia was one such example--even though the situation may not be a very common one. Evocation reflects the process of retrieval from memory, and while it is well established that retrieval processes depend fundamentally on the cues provided (e.g., Tulving and Psotka 1971), it is useful to distinguish those cues that are consistently present in a given situation from those that vary in different instances of a given situation. For the purposes of this thesis, the interest is in cues that are consistent rather than those which are inconsistent. This is in line with the focus on establishing a competitive advantage over alternatives via evocation. For those more interested in tactical advantages, attention should be given to the more transient cues that can affect evocation.

In the following sections, the role of memory in the brand evocation stage of brand choice is discussed. The discussion proceeds in three stages. First, the conceptualization and operationoalization of memory with respect to brand evocation is discussed. Second, the structural and organizational aspects of memory are discussed. Third, the discussion will consider memory as a process with emphasis being given to factors influencing accessibility of information from memory.

Dimensions of Brand Memory

Anderson (1988) noted recently that the field of memory research is plagued with many unresolved theoretical dichotomies that reflect the many facets that collectively make up memory. Some of the dichotomies that are relevant to the measurement and management of brand evocation to be considered in the following are: semantic versus episodic memory, and implicit versus explicit memory, stimulus versus memory-based choice and recognition versus recall.

To begin, it is useful to return to a basic model of cognition comprising encoding and retrieval. Craik (1979, p. 64) notes that "the general view that memory can be understood in terms of encoding, retrieval processes, and their interrelations has proved of continuing usefulness over the past few years." It is noteworthy that this model of cognition fits neatly within the earlier described Hansen (1972) formulation of the consumer decision making process comprising exposure, deliberation and response. The deliberation stage may be considered to include the cognitive processes that intervene between exposure and response, namely encoding and retrieval, and evaluation. Evaluation as a cognitive process has received considerable attention in the literature (e.g., Einhorn and Hogarth 1981; Johnson, Payne and Bettman 1988; Payne 1982) and is not considered at length here. As noted by Keller (1991a, p. 42), in consumer research, considerable attention has been given to the encoding processes, especially in communications research. Concepts such as "involvement" typically refer to effort directed at encoding (e.g., Greenwald and Leavitt 1984; Kiselius and Sternthal 1986; Krugman 1965) and the hierarchy of effects (Lavidge and Steiner 1969). Indeed, consumer research has tended to give considerable attention to learning concepts (e.g., Bettman 1979; Hoch and Deighton 1989).

In general, consumer researchers have given relatively little attention to the important issue of memory, especially in terms of retrieval of brands. However, like the memory researchers before them (e.g., Tulving and Thomson 1973), consumer researchers are coming to recognize the critical importance of retrieval factors (e.g., Baker and Lutz 1988; Keller 1987, 1990; Mitchell 1982).

Following this recent recognition of the importance of retrieval, this thesis focuses on retrieval processes. However, in following this trend, it is important to understand the impact of a number of significant memory dichotomies. In the next four sections, I will consider four important dimensions in memory, and their implications for consumer research. The first two dimensions considered, episodic versus semantic and explicit versus implicit memory, derive from the memory literature. The two remaining dimensions refer to distinctions recognized in the consumer memory literature. Stimulus versus memory-based choice is rooted in the consumer behavior literature as the notion of stimulus versus memory-based judgments suggested by Lynch and Srull (1982). The recall versus recognition distinction has had a long tradition in both the memory literature and the consumer research literature.

Episodic Versus Semantic Memory

Episodic memory refers to personally experienced events and their temporal relations in subjective time (Tulving 1985, p. 387). Semantic memory refers to meanings and memories that are not related to any particular episode. In a consumer context, memory of a particular ad for Coca Cola seen on the television last night constitutes an episodic memory. Memory of something about Coca Cola such as product benefits (irrespective of source, and whether or not the source is remembered) is semantic memory.

In consumer research applications, and especially in communications research, it is typically *episodic* recognition and recall that is measured even though it is not clear that this is the type of memory that is used in consumer choice. That is, taking these kind of measures implies that, at choice, consumers try to think of advertising that they saw recently for brands within that category. For example, Meyers-Levy (1989b) in two experiments examining brand name memory asked subjects to first recall all that they could about the ads that they had seen, and subsequently gave a recognition test for the brands. All the brands in her advertisements were novel, and the critical ads were exposed to subjects once amongst a set of filler ads. It should be noted that Meyers-Levy was *not* studying advertising effectiveness per se, but rather, brand name memory; nevertheless, episodic measures of brand name memory are often taken in assessing memory effects in communications research (e.g., Keller 1987, 1991a; Singh and Rothschild 1983; Singh, Rothschild and Churchill 1988; Zielske 1982). Hence, Meyers-Levy's use of episodic measures is by no means unique.

Academics and practitioners tend to focus on episodic measures of advertising effectiveness. Haley and Baldinger (1991) reporting on an ARF copy research validity project report on five "episodic" recall measures (e.g., "On the show you just saw, do you remember seeing a commercial for a brand of ___________?" If 'Yes': "What brand was that?") and only two "semantic" memory measures (e.g., "When you think of (Product Category), what are all the brands you think of?")[5]. Furthermore, what I have labeled a semantic memory measure here was taken in a mall intercept setting. Subjects' semantic memory was tested immediately after exposure to a ten minute program containing the target ads. Aside from the obvious possibility of demand effects, the immediacy of testing after the exposure to the ads reduces the ecological validity of these semantic memory measures. The important distinction between memory of an episode and memory of a thing (e.g., a brand) is often neglected. Rossiter and Percy (1987) are perhaps the clearest in stating that the central "objective in brand recall is to get the buyer to recall the *brand*, regardless of whether he or she can recall the advertising" (p. 144, their italics).

Consumer researchers interested in the role of memory in brand choice need to consider the types of memory processes that take place in the choice situation. The distinction should be recognized, as it has by memory researchers, between recognition of an episode versus context free recognition (Mandler 1980). In consumer choice, it is context free recognition that is important. Whether you remember having seen the brand in advertisements, or at a friend's place, or simply heard the name on the radio, the marketer's concern is that you are able to recognize the brand in the purchase or consumption context. That is, it is not important to remember having seen the brand in a particular context before; it is important to remember the brand in the current choice context. Similarly, the important element of recall is memory for the brand independent of memory for the presentation context and in general, independent of memory *given* the presentation context as a cue.

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[5] Haley and Baldringer (1991) actually had a third "semantic" measure which was the sum of the other two. It should be noted that the distinction between episodic and semantic measures was not made by Haley and Baldringer.

Implicit Versus Explicit Memory

The distinction to be discussed here is one distinguishing between memory defined in terms of what we explicitly remember (e.g., recall/recognize) and memory defined in terms of facilitation of later tasks. Roediger, Weldon and Challis (1989) define implicit measures of retention as "those on which subjects are not told to remember events, but simply to perform some task; retention is measured by transfer from prior experience (relative to an appropriate baseline), and presumably conscious recollection is not necessarily involved" (p. 3). Jacoby and Kelley (1987) invoke the particularly useful concepts of memory as an "object" versus memory as a "tool" to highlight the distinction between explicit and implicit memory. Explicit memory (memory as an object) measures include free recall, cued recall, recognition, and various judgments such as frequency, modality and feeling of knowing (Roediger et al. 1989, p. 3). Implicit memory (memory as a tool) measures include reading inverted text, naming fragmented words or pictures, lexical decisions, word and picture identification of briefly presented stimuli, and word stem completion (Schachter 1987, p. 507; Roediger et al. 1989, p. 3). In these implicit memory tasks, memory is measured by the degree to which performance on the critical task is influenced by prior experience, without the prior experience necessarily being reflected on explicit measures.

In marketing research, the measures of memory taken are typically explicit measures, and represent memory of the past as an object that is inspected in its own right. However, in general, the interest of researchers is in consumer choice, and how the consumer *uses* memory (resulting from prior exposure to a brand and its related communications) in the brand choice process. That is, researchers should be interested in influences of memory implicit in the consumer's performance of the choice task irrespective of whether or not the consumer is explicitly aware of using his/her memory.

Most studies of advertising effects provide excellent examples of the marketing researcher's failure to recognize the distinction between memory as an "object" and memory as a "tool." Researchers examining memory effects arising from exposure to advertising typically test that memory by asking subjects to recall the communication's message or meaning. However, it is assumed, and not demonstrated, that consumers in a purchase or consumption situation use such explicitly recalled information from advertisements. The influence of an advertisement on memory is likely to be more subtle than that measured by explicit measures of advertising recall, and accordingly, current measures are likely to overestimate the memory effects of advertising.

Advertising may have an influence on consumer choices through both explicit and implicit memory. A particular advertisement for a brand may "come to mind" explicitly in the situation where the consumer is making some decision. An example of this would be the recall of a preview for a movie when trying to think about what movie to go and see. However, the influence of a past exposure to an advertisement may be implicit. That is, there may be an influence on the consumer's choice behavior without the consumer's explicit memory of the advertisement. For instance, the consumer thinks of going to a movie for which s/he saw the preview when attending a theater the previous week, but without being aware that s/he thought of the movie due to having seen the preview. In effect, the movie came to mind in an apparently spontaneous fashion. In this instance, the influence of memory is implicit in performance of the choice task.

Some points should be noted about the implicit/explicit distinction. First, while it appears to be similar to the episodic/semantic distinction, the two conceptualizations should be kept separate. Episodic memories appear to be always explicit, but semantic memories can be either explicit or implicit. Additionally, the two dimensions represent two fundamentally different views about memory; the notion of implicit memory has been developed by functionalists and the concepts in explicit memory have been developed by structuralists (see Watkins 1990).

Second, there is some ambiguity in the implicit/explicit distinction as to whether it refers to implicit versus explicit retrieval efforts (Roediger et al. 1989) versus implicit versus explicit recollection or awareness of the influence of memory (Jacoby and Kelley 1987). In many of the tasks that are used by memory theorists, this distinction may not appear particularly important; however, in the consumer choice domain, it is important because brand evocation may be mediated by spontaneous retrieval that is not under conscious control, but where the consumer is consciously aware of the alternatives that come to mind. In the example of a memory-based choice of a film, the preview may have come to mind spontaneously, but once there, the consumer was aware that it was recollection of the preview that led him/her to choose that film.

Finally, the distinction made by memory theorists between explicit and implicit memory appears to parallel the long established distinction between intentional and incidental learning. For some time, consumer researchers have been aware that much consumer learning is likely to take place under relatively low involvement conditions (e.g., Krugman 1965). In order to simulate these low involvement conditions in communications research, researchers typically have a condition where subjects focus on evaluating the elements of the ad even though the later critical measure will be a brand evaluation (e.g., Gardner 1985; Mitchell and Olson 1981; Petty and Cacioppo 1981). Other researchers have manipulated involvement directly by offering differing amounts of reward (e.g., Baker 1991). These efforts evidence the concern of consumer researchers with capturing low involvement or what psychologists call incidental learning (e.g., Craik and Lockhart 1972).

The section highlights the fact that a similar distinction can be made with regard to the processes that occur at retrieval. Specifically, the effort consumers expend in retrieving brands is often likely to be minimal, especially for low involvement products. Therefore, appropriate measures of memory should reflect this state, or at least capture the memory that is likely to be used in this state. In summary, the incidental/intentional learning dichotomy and the implicit/explicit memory dichotomy represents another parallel between encoding and retrieval processes as was noted earlier.

Stimulus-Based Versus Memory-Based Choice

An important situational distinction that is orthogonal to the earlier purchase/consumption distinction is that made by consumer researchers between stimulus-based versus memory-based choice (Lynch and Srull 1982). Originally, this distinction was offered as a means of distinguishing between the brand evaluations made where all relevant brand information was externally present versus evaluations based on recalled brand information: "If all the relevant information is directly present when a judgment is made, such a judgment may be called a ‘stimulus-based’ judgment . . . [while] ‘memory-based’ judgments [are those] in which none of the relevant information is physically present, so that the consumer must rely exclusively on information stored in memory. . . . Perhaps even more frequent are 'mixed' judgments in which some information is physically present but other relevant information is stored in memory" (Lynch and Srull 1982, p. 19). Sitting at home after having looked at a number of cars and deciding which one to buy would be a pure memory-based choice. Making the decision based on information in brochures and notes taken while looking at the cars would be a stimulus-based choice. A decision made while standing in one car lot thinking about other cars that were seen would be a mixed choice.

However, Lynch and Srull (1982) were addressing the issue of whether the relevant brand information was physically available or not, and not whether the brand itself was physically available or not. Recently, a number of researchers (Nedungadi 1987, 1990; Alba et al. 1991) have recognized that the stimulus-based versus memory-based distinction may be applied to brand retrieval occasions where the brands are either present (stimulus-based retrieval) versus absent (memory-based retrieval or evocation). An example of stimulus-based brand retrieval would be the purchase of sodas while in the supermarket. An example of memory-based brand retrieval would be the brand requested of a friend who has just offered to go and get you a drink.

As pointed out by Alba et al. (1991), very few decisions in the real world are purely "stimulus-based." In effect, many consumer decisions include some memory component. For instance, seeing some brands may remind a consumer of some alternative brands for which they may then physically search. And with regard to evaluation, even though the package may contain all relevant information necessary, consumers appear to rarely examine information on the package (e.g., Hoyer 1984) suggesting that memory plays a role in both the retrieval and evaluation stages of most consumer decisions. The most important implications of this fact is that retrieval from memory will not always be accurate, and more importantly, will be systematically biased by accessibility.

It should be noted that the model of consumer choice based on evocation and evaluation at the beginning of this chapter is one that implies memory-based brand retrieval. That is, evocation refers to recall of brands. As has been mentioned, this thesis focusses on decisions where the brands are not present. The role of memory in brand retrieval where the brands are present is discussed in the following section discussing recall and recognition.

Recognition Versus Recall

Perhaps the two most commonly considered measures of retrieval from memory are recognition and recall (Lynch and Srull 1982). Consequently, it is not surprising that these two measures tend to be the most frequently considered measures of memory in consumer research applications (e.g., Bettman 1979; Rossiter and Percy 1987; Stewart, Furse and Kozak 1983; Singh, Rothschild and Churchill 1988). It should be noted that the recognition-recall distinction parallels the distinction between stimulus-based and memory-based (Lynch and Srull 1982) retrieval described earlier. Recognition may be considered to correspond to stimulus-based retrieval and recall may be considered to correspond to memory-based retrieval.

In measuring recognition and recall, market researchers assume that these measures accurately reflect the memorial processes underlying brand choice. In the case of stimulus-based retrieval, the brands are present at the point of the brand choice while in the memory-based case, the brands are "recalled" from memory. It is important to recognize that "memory" has a role in both of these brand choice situations; and importantly, the evidence of memory playing a role may be implicit rather than explicit.

In the case of the memory-based choice, in the first instance, the role of memory is obvious in that brands must be retrieved from memory in order to be selected. However, in the instance of memory-based choice, what is not so obvious is that the retrieval process need not necessarily be an explicitly motivated search initiated by the consumer. Indeed, considerable research has recently suggested that memory, and in particular the process of remembering, may be relatively passive. "Passive remembering" refers to "the general experience of having things come to mind without their being requested" (Spence 1988, p. 311). While Spence (1988) goes on to discuss mostly episodic memories coming to mind spontaneously, it should be apparent that the same notion may apply equally to semantic memories. That is, brands may come to mind with little apparent cause or motivation--in effect, the retrieval of brands is relatively spontaneous. In this instance, it seems likely that the memory that is being used is explicit even though it may not be explicitly sought. That is, consumers will be aware of alternatives "coming to mind" before evaluating and choosing a brand.

In the stimulus-based choice situation, the role of memory is not immediately apparent. However, numerous studies have demonstrated that the influence of prior experience with an object may affect subsequent time to perceive, process and recognize the object (Jacoby and Kelley 1987; Jacoby, Kelley and Dywan 1989; Schachter 1987). This is an effect of "memory" for the object--be it conscious or not. Importantly, it is this kind of memory that is more relevant to stimulus-based brand retrieval than are recognition measures. In the consumer context, Alba et al. (1991) state that "even when the consumer looks at a grocery store display of a product category without preconceptions, memory factors influence the ease with which specific brands 'catch one's eye' and enter into the consideration set" (p. 3). In effect, memory in the stimulus-based situation is not so apparent because the cognitive processes often are automatic. Alba and Hutchinson (1987) define automaticity as "processes that can be performed with minimal effort and without conscious control" (p. 413).

It may be noted that implicit measures appear to be more relevant to stimulus-based brand retrieval than to memory-based brand retrieval. Specifically, it seems likely that explicit measures of recall mirror quite well the processes that are taking place in the memory-based retrieval process. However, it should be clear that recognition does not appear to underlie stimulus-based brand retrieval--rather, the most appropriate measures of memory in this case would be implicit memory measures.

In conclusion, it is brand memory as used in the purchase or consumption situation that is critical, *not* explicit recognition or recall of a brand in the encoding context. Alba and Hutchinson (1987) point out that the role of memory in stimulus-based brand retrieval is not one of recognition, but rather one of identification or speed of recognition (see also Alba et al. 1991, p. 13). In particular, Alba and Hutchinson (1987, p. 429, footnote 7) argue that identifying the exposure context is seldom important for brand name recognition. Perhaps even more clearly, brand name recall is not an episodic task--that is, the consumer is not likely to need to identify whether or not a brand was seen previously in a particular context. It is simply not important. This is not to say, however, that the context is unimportant; it appears that the degree to which the context is similar at exposure and choice may facilitate brand retrieval, whether or not the person is aware of the match.

Consumer researchers have begun to use implicit memory measures in a variety of forms, reflecting at least an implicit understanding that memory as demonstrated in choice may be different from the explicit memory measures such as recognition and recall. In particular, item familiarity, which is considered only a part of the explanation in typical list learning paradigms (Mandler 1980), is thought to be a more appropriate conceptualization of the stimulus-based retrieval relevant to many consumer behavior choices (Baker et al. 1986). An appropriate measure of this retrieval process is considered to be "identification" or "ease of recognition" (Alba and Hutchinson 1987; Alba et al. 1991; Baker et al. 1986). Measures that are sensitive to familiarity include time taken to read words and name objects (Baker et al. 1986), time taken and success in word stem or fragment completion tasks (Bassili and Smith 1987; Nedungadi 1990; Tulving, Schachter and Starke 1982), and response times in identifying words (Jacoby and Dallas 1981).

One final note is that many critics of current advertising research have focused on the neglect of researchers to consider ecologically valid lags between encoding and retrieval (e.g., Baker and Lutz 1988; Keller 1991a; Hoyer and Cobb 1985; Sawyer and Ward 1979). It should be noted that this lag is not the same as the issue being raised in the distinction between episodic and semantic memory, nor in the distinction made between implicit and explicit memory.

The "Structure" of Brand Memory

In this section, the notion of memory being structured as an associative network is reviewed; in the section that follows, the determinants of accessibility are considered. The distinction between structure and process corresponds with the nature of associations and the "strength of associations" described by Nedungadi and Hutchinson (1985).

Associative Links

What comes to mind in any retrieval situation is considered to be a function of the associative structure of memory. Despite my wish to adopt a more functional approach in discussing the role of memory in consumer decision making, much research has addressed the the structure and organization of memory. Despite some of its failures (see Anderson 1989), structural approaches have nevertheless fundamentally affected the way that researchers think about memory.

Perhaps the most dominant metaphor of memory structure is that of the theory of spreading activation through an associative network (Anderson 1983a, 1983b; Anderson and

Bower 1974; Quillian 1962, 1967). Essentially, the notion is that the elements of memory, i.e., concepts, are represented as nodes within a network, with properties of the concept represented as labeled relational links from the node to other concept nodes (Collins and Loftus 1975, p. 408). The theory posits that activation of a node leads to activation spreading to all nodes linked to the initial node. The degree to which activation of one node activates another is what underlies the concept of association strength. While association strength will be discussed at some length in the following section, it is appropriate that structural notions of association strength be discussed here.

The first point to note is that while the theory posits that concepts are associated via relational links, Collins and Quillian (1969) specified that links are assumed to have differential accessibility (i.e., strength or travel time). In particular, they demonstrated that memory appeared to be organized in an economical manner such that verification tasks took longer if the object-property relation was one where the property was common to all exemplars in a category. For instance, it took longer to confirm that Seven-Up is carbonated than to confirm that Seven-up is colorless. In effect, unique properties of the object are assumed to be linked directly to the object while properties common to the object and other members of a "superset" are linked to the superset. Consequently, verification in the second instance takes longer as "the person must move up one level before he can retrieve the property" (Collins and Quillian 1969, p. 240) such as Seven-Up being carbonated.

A second and related notion is that the direct links from concept node to other nodes have varying strengths. Collins and Loftus (1975) point out that the original formulations of the network model of memory assumed that the links themselves have different "criterialities" indicating how essential each link is to the meaning of a concept. This appears to reflect the notion that even direct links between an object and its properties may vary in their accessibilities.

Moreover, the criteralities are not necessarily symmetric: "these links are pointers, and usually go both directions between two concepts. . . . The criterialities on any pair of links between two concepts can be different" (Collins and Loftus 1975, p. 408). Specifically, it might be highly criterial for the concept of donut to be junk food, and not very criterial for the concept of junk food that one kind be a donut.

A third and final aspect of associative structure that relates to accessibility of information in memory is the fan effect in which subjects are slower to recognize a fact related to some concept when other facts are also related to the concept (Anderson and Bower 1974; Reder and Ross 1983). Confirmation of a fact related to some concept is a function of the number of other facts that are related to that concept--consequently, the more facts associated with a concept, the longer it will take to verify any particular fact.

Although the original notion of an associative network was developed to explain semantic memory, consumer researchers have readily adapted it so that the concepts linked to a brand concept can include attributes, evaluations, categories and episodes (e.g., Brucks 1986; Smith, Mitchell and Meyer 1982).

Categories

Research in the area of categorization and associative networks has generally been fairly closely related, and ongoing research in the area of categorization, like the associative network model, is aimed at exploring and modelling the structure of memory. Both the associative network literature and the categorization literature investigate the organization of concepts in memory and how meaning is attached to those concepts. The notion of category memory as an associative structure is generally implied by categorization researchers and sometimes stated explicitly (see Barsalou 1983); however, they further theorize that memory is structured in an hierarchical manner with exemplars (e.g., brands) stored as members of a category (e.g., product category). A further, and perhaps more important, difference between those investigating categories and those investigating the associative network in memory is that the former are more interested in the nature and determinants of category structure, while the latter are more interested in the processes of retrieval from memory. Interestingly, the two literatures become related as the determinants of category structure are often found to be highly related to retrieval (e.g., Mervis, Catlin and Rosch 1976; Nedungadi and Hutchinson 1985).

One of the most researched aspects of categorical structure is that of graded structure. All members of a category are *not* equal. Some members are perceived to be more "typical" of the category and are thought to be more representative (e.g., Barsalou 1985; Cantor and Mischel 1979; Medin and Smith 1984; Mervis, Catlin and Rosch 1976; Mervis and Rosch 1981; Rosch and Mervis 1975). For example, a robin is considered to be a better example of a bird than is an ostrich. Consumer researchers have also demonstrated that typicality measures developed in the categorization literature (e.g., Rosch and Mervis 1975) also apply to product categories (see Nedungadi and Hutchinson 1985; Ward and Loken 1986).

From the consumer research point of view, most investigations of the role of typicality effects have tended to focus on the relationship between typicality and preference (e.g., Loken and Ward 1987, 1990; Ward and Loken 1988). In general, the relationship is found to be consistently high (Nedungadi and Hutchinson 1985). However, of more interest in the current context is that measures of typicality are highly correlated with measures of memory related to "brand awareness and the evoked set" (Nedungadi and Hutchinson 1985, p. 498). For instance, measures such as order, speed and frequency of generation (recall) of exemplars (e.g., Mervis et al. 1976) have been found to be related to typicality. As pointed out by Nedungadi and Hutchinson (1985, p. 499), all of these measures "are natural indices of brand awareness and should be related to the ease with which a brand is recalled when the need for a particular product class arises."

Of relevance to evocation is the contribution made by Barsalou (1983, 1985) in focusing attention on goal-derived categories in addition to common taxonomic categories. Common taxonomic categories (e.g., birds, furniture, fruit) constitute the focus of much category research. Barsalou (1985) identifies goal-derived categories (e.g., birthday presents, things to take on a camping trip and things to do for weekend entertainment) which are categories specially constructed in order to meet some goal. Barsalou (1983) also identified a subset of goal-derived categories to be ad hoc categories which are categories that have been constructed to meet some novel goal.

Barsalou (1985) noted that goal-derived categories are often used for instantiation of exemplars while common taxonomic categories tend to be used typically for classification of exemplars. This appears to be related to the fact that members of taxonomic categories commonly share features that tend to be ecologically related (e.g., feathers, wings and beak) and which put all the members in one category. On the other hand, goal-derived categories do not appear to share clusters of co-occuring properties (e.g., things to take on a camping trip include items of food, clothing, tools, and so on).

The notion of goal-derived categories is useful as consumer evoked sets tend to be defined in terms of specific purchase and consumption situations (Alba and Hutchinson 1987). For instance, in a typical purchasing situation in a supermarket, the consumer may be shopping with the goal of finding a suitable meal for the evening. This leads to an evoked set that combines brands from across product categories. In a consumption situation such as wondering what to drink after getting up in the morning, the evoked set might consist of coffee and orange juice.

An interesting feature of goal-derived categories is that recall of exemplars is not predicted by typicality (Barsalou 1985). This is despite the earlier noted relationship between typicality and retrieval of exemplars in common taxonomic categories given a category label as a cue (e.g., Barsalou 1985; Mervis et al. 1975). Furthermore, the rate of recall of exemplars is slower in the case of goal-derived categories than for common taxonomic categories. However, this result is perhaps best understood in the context of the earlier comment that typicality, evocation and evaluation are probably dynamically related. Barsalou would appear to agree given his notion that structuring of categories is dynamic (Barsalou 1985) and frequent instantiation of a goal-derived category will result in it taking on a similar structure to a common taxonomic category (Barsalou 1983, 1985). Despite this dynamism in the structure of categories, it is encouraging, from the point of view of selective evocation, to note that frequency of instantiation reliably accounted for recall of exemplars from both common taxonomic categories and goal-derived categories (Barsalou 1985). As Barsalou (1985) points out, this result is consistent with one of the oldest findings in memory: the more often two things co-occur, the more likely one is to elicit the other in a production task (p. 637-638).

Assuming that evocation tends to reflect organizational features of memory such as categories, it is important to recognize that categories (and so, evoked sets) will vary depending on the contextual cues that are present. For instance, Roth and Shoben (1983) demonstrated that the representativeness of exemplars of a concept is restructured once context is introduced. Interestingly, Roth and Shoben (1983) also demonstrated the effect of context on category structure using implicit measures of category membership although typicality within context was measured via more standard ratings (Experiment 2a). In effect, they showed that time taken to respond true/false to a subsequent question was influenced by how easily an exemplar can be identified as a member of a category. For instance, in Experiment 1, subjects were presented with a biasing context sentence identifying the category, a target sentence identifying an exemplar and a test sentence. For example, (1) Fran pleaded with her father to let her ride the animal; (2) She was very fond of the horse/mule/cow/goat; (3) She was fond of the animal. The test question, which was the same irrespective of the context sentence or the exemplar in the target sentence, was answered faster when the the exemplar was typical for the context--i.e., horse and mule are typical in the context of an animal to ride while cow and goat are not.

Further research has confirmed the notion that categories are flexible structures that are context dependent (Barsalou and Sewell 1985; Barsalou 1985). Interestingly, the influence of context has some important implications for the structural assumptions about categories. Specifically, Roth and Shoben (1983) showed that the notion that context simply leads to a shift in the prototype (i.e., all associative links remain unchanged, but one concept becomes the new prototype) should be rejected, implying that the entire representativeness of related concepts is restructured with the introduction of a context.

Overall, it will have been noted that categorization research has generally concerned itself with dimensionality of categories, and in turn presumed that this influences processes such as evocation and evaluation. However, a problem arises from the intercorrelations of measures of graded structure (typicality), preference and evocation (see Nedungadi and Hutchinson 1985). In effect, the managerial usefulness of the notion of categories is reduced as all three factors are interrelated ecologically. Nevertheless, it is to realize the three factors are conceptually independent even though they may become related over time. The tendency to ignore the conceptual independence (and ulimately, the development of ecological interrelatedness) of these measures reflects the focus of the categorization literature (and associative network research) on the structure of memory.

The structural approach may be contrasted with that adopted by functionalists who focus on phenomena, and on retrieval rather than so called structural determinants of retrieval (e.g., Watkins 1989). Given the focus of this thesis on evocation, it is appropriate that attention be given to retrieval rather than structural assumptions about memory. Accordingly, the following section focuses on the process of brand memory, and in particular, the notion of association strength or accessibility.

The "Process" of Brand Memory

From a definitional point of view, it is necessary to first distinguish between "availability" of brands versus "accessibility" of brands in memory. The distinction corresponds to that made by Tulving (Tulving and Pearlstone 1966; Tulving and Psotka 1971) indicating that something may be stored in memory, but becomes retrievable only with the provision of some cues. Alba and Chattopadhyay (1985a) argue for a parallel distinction between absolute and situational awareness. A consumer may know of a wide range of brands, but in any choice situation, s/he may retrieve only a portion of those brands. That is, the evoked set represents brands that are accessible in a given place at a given time.

Brands may be said to vary in terms of their degree of accessibility, with some brands being retrievable in response to few or no cues while other brands require more cues to facilitate their retrieval. Furthermore, brands may vary qualitatively in terms of their accessibility, with some being retrievable in response to some specific cues, but not in response to others. Brands enjoying favored evocation will be those that are highly accessible. Those that are highly accessible to the cues that typically characterize the most common purchase and consumption situations will be likely to enjoy some degree of brand equity.

It is relatively obvious that a person can retrieve from memory only information that has been encoded--and which has been retained and is therefore "available." However, information may be "available," but not "accessible" as has been noted above. There appear to be three different types of determinants of accessibility: encoding factors, organizational factors and retrieval factors. Although the determinants are not always easy to separate as will be seen in the following, the conceptualization of three types of determinants is useful as it reflects the qualitatively different approaches taken in the literature.

Encoding Determinants of Accessibility

The nature of processing is perhaps one of the better known and arguably better understood determinants of accessibility. Of encoding effects, perhaps the best known factor increasing the accessibility of memory content is repetition, or rehearsal as it is usually known by memory theorists (e.g., Ebbinghaus 1885; Ashcraft 1985). Sawyer and Ward (1979) provide a comprehensive review of repetition's role in mediating the accessibility of advertising effects.

A second encoding factor that has received considerable attention in terms of its ability to affect retrieval is the "levels of processing" approach (Craik and Lockhart 1972). The central proposition of this approach is that likelihood of remembering a particular stimulus depends on whether the stimulus was processed at a shallow, nonsemantic (e.g., processing form) or deeper, semantic (e.g., processing of meaning) level. This approach has received considerable attention in both the psychology of persuasion and the area of advertising effects in marketing. The best known model in the marketing domain is probably the Elaboration Likelihood Model developed by Petty and Cacioppo (1983), which has been specifically applied in marketing communication settings (Petty and Cacioppo 1983; Petty, Cacioppo and Schumann 1983).

A final encoding factor that is known to affect retrievability of information is the order of presentation. Specifically, in the list learning paradigm, items seen first (primacy) and items seen at the end of a list (recency) are better remembered than items in the middle of the list. One possible illustration of this in the marketing field is the evidence for first mover advantages (e.g., Robinson and Fornell 1985). In effect, brands first to enter the market enjoy a kind of primacy effect in that they are better remembered because they appear at the "beginning of the list."

Evidence for recency effects is seen in "priming" effects. A prime is a recently encoded stimulus that tends to be readily accessible. For instance, in an application of the priming paradigm, Segal (1966) found that items to which subjects were exposed in a pretask were more likely to be given as associates in a subsequent word association task. Consistent with the notion that the effect is a recency effect, Segal (1966) found no effect of repetition or delay (up to 12 minutes) between the pretask and the test. The finding by Nedungadi (1987, 1991) of priming facilitating brand recall is consistent with a notion of recency. Priming can also be considered a component of the retrieval situation and will be given further consideration later.

Organizational Determinants of Accessibility

One approach to the accessibility of components of memory has been to use the notion of the categorical organization of memory, and in particular, the notion of graded structure. This refers to the way in which members of categories vary in terms of their representativeness or typicality (e.g., Barsalou 1985; Lingle, Altom and Medin 1984; Mervis and Rosch 1981; Rips 1975). Typicality has been found to be highly correlated with a number of memory measures such as order, speed and frequency of production of exemplars (e.g., Rosch and Mervis 1975; Smith, Shoben and Rips 1974). Similar results have been reported in the marketing domain with respect to brands in product categories (Nedungadi and Hutchinson 1985; Ward and Loken 1986).

Given the apparent relationship between typicality and accessibility, consumer researchers have devoted attention to finding the determinants of typicality (Loken and Ward 1990; Nedungadi and Hutchinson 1985). In general, a variety of factors have been identified as determinants of typicality--for example, frequency of instantiation, family resemblance and evaluation (Barsalou 1985; Loken and Ward 1987, 1990; Nedungadi and Hutchinson 1985). Frequency of instantiation refers to frequency of encounter of an instance as a member of a category (Barsalou 1985; Loken and Ward 1990). Family resemblance refers to the proportion of features that an object shares or has in common with other members of the category versus features that are distinctive (Rosch and Mervis 1975). Evaluation relates to the fact that typicality tends to be related to attitude or overall evaluation toward an item suggesting that categories may be developed on the basis of affect (Loken and Ward 1987, 1990; Nedungadi and Hutchinson 1985). This latter concept relates somewhat to Barsalou's (1985) ideals construct--that is, that in categories formed on the basis of fulfilling a goal, more typical members are better suited to fulfilling that goal.

As was noted earlier in the discussion of the structural aspects of memory, the interest in this thesis is to avoid invoking the mediating structure (graded or otherwise) and to think more directly of the determinants of accessibility. While recall of category exemplars is highly related to typicality judgments (Barsalou 1985; Nedungadi and Hutchinson 1985), this is likely due to them sharing determinants--most notably, frequency of instantiation as a member of a category (Barsalou 1985). I do not subscribe to the notion that typicality is important as a predictor of exemplar production (Barsalou 1985); instead, an equally viable explanation of exemplar production *and* typicality can be based on a set of common determinants, one of the most important being frequency of instantiation within the category. Differences between the two reflect the degree to which each is a function of other determinants. Accordingly, most attention is given to the encoding (already discussed) and retrieval determinants of accessibility (to be discussed in the following).

Retrieval Related Determinants of Accessibility

The retrieval related factors that are thought to affect accessibility have been broken down into three classes: retrieval cues, primes, and interactions of encoding and retrieval. All three relate to the effect of situational factors that are present at retrieval. It should be noted that there seems to be no consistency in the literature in the usage of "cues" versus "primes." For the purposes of this thesis, I have defined a cue as information that is present at the point of retrieval; a prime is defined as information that has been presented *prior* to the retrieval situation. The notion of prime suggested here is in line with the original notion of priming as semantic preparation (Collins and Loftus 1975).

Retrieval cues

Perhaps the most obvious component of the situation which can influence retrieval is the presence of cues. As was noted earlier, the presence of cues can make information that was available but inaccessible, accessible (Tulving and Pearlstone 1966; Tulving and Psotka 1971). In the marketing realm, Keller (1987, 1990) has argued that when the consumer decision is not made during ad exposure, it is important that brands carry cues that will facilitate consumer memory for advertising. Keller's studies have supported his hypotheses that the provision of verbal or visual material from the ad on the product package will facilitate retrieval of elements from the ad memory trace.

Belk (1975a) has suggested that the various studies that have demonstrated an effect of situation on choice may be attributable to "subtle cuing effects". However, what is not known in these studies is the exact nature of the cue and the process by which it influences the consumer's choice. The demonstration that situation affects choice is not very specific and not particularly helpful; it would be more interesting to know what components of the situation acted as cues.

In addition to a facilitatory effect, there is considerable evidence to show that the provision of cues can actually inhibit retrieval of related information by blocking (Roediger and Neely 1981) or even supressing (Bjork 1989) accessibility. One of the best known phenomena in this area, and perhaps best known in consumer research, is part-list cuing (e.g., Alba and Chattopadhyay 1985a, 1985b, 1986; Slamecka 1968, 1969). For instance, Alba and Chattopadhyay (1985a) found that the provision of a number of brands of shampoos as cues led to reduced recall of brands relative to those who were not cued. The effect is typically explained by Rundus' theory (1973) stating that retrieval is a sampling with replacement process where sampling increases the "strength" and therefore increases the likelihood of retrieval of an item. In effect, the person gets "stuck" on cued brands and is unable to access competing ones (Alba and Chattopadhyay 1985a, p. 342). However, the effectiveness of part-list cues in suppressing recall appears to be a function of the complexity of the knowledge structure of the person. Those with more detailed, complex, segmented knowledge structures appear to be less influenced by part-list cues (Alba and Chattopadhyay 1985a).

What accounts for facilitation under some circumstances and inhibition under others? It appears that recall is inhibited when the cue is an exemplar of the category from which other exemplars must be recalled. Facilitation occurs when the cue is at a different level in the categorical structure. For example, a product attribute being used as a basis for the formation of an evoked set.

Priming retrieval

There are two distinctive types of primes that need to be considered. Memory theorists discussing the nature of priming and more specifically the priming paradigm are referring to the facilitation in retrieval of a concept and/or its associated concepts (e.g., Collins and Loftus 1975; Segal 1966). Theorists in the area of social cognition also discuss priming, but are referring more to a demonstration of the use of an activated construct in judgment of and behavior toward a target person (e.g., Herr 1986).

First, priming in the memory context may be either direct or indirect (Leavitt 1988). The priming paradigm clearly demonstrates direct priming effects; that is, a recent prior exposure to a word will facilitate later generation of that word (e.g., Collins and Loftus 1975; Segal 1966) or identification of that word in a word fragment completion task (e.g., Tulving, Schachter and Stark 1982; Nedungadi 1990).

The priming of target associates will lead to indirect priming effects measured in terms of more rapid category identification, sentence verification and exemplar production (generation) as demonstrated and used to support a model of "spreading activation" through an associative network (Collins and Loftus 1975). Within the associative network structure, memory is searched via activation spreading from two or more nodes until an intersection is reached. Priming (or preparation) is similar to the memory retrieval process except that activation from a primed node spreads through the network to some unspecified depth leaving behind activation tags. The subsequent presentation of a concept leads to "memory" when the activation from the later concept makes contact with one of the tags left earlier by the prime. For example, prior exposure to the word "doctor" would heighten the accessibility of related concepts such as "nurse," this heightened accessibility being reflected in the facilitation of identification of the word "doctor" over an unrelated word such as "bread" (Schvaneveldt and Meyer 1973).

The notion of priming that is being discussed is somewhat different from the notion of heightening category or construct accessibility, which has been found to influence subjective judgments of ambiguous objects. A considerable amount of work in the social cognition literature has demonstrated that unobtrusive exposure to a set of evaluatively laden terms (e.g., related to hostility) will influence subsequent ratings of an ambiguous person (e.g., Higgins and Bargh 1987; Higgins, Rholes and Jones 1977; Srull and Wyer 1979, 1980; Wyer and Srull 1981). A number of consumer researchers have demonstrated related priming phenomena in the marketing domain (Herr 1989; Meyers-Levy 1989a). It is reported that recently exposed stimuli that prime an evaluative dimension (e.g., low price versus high price cars) affect subsequent evaluations of an ambiguous brand. In general, the prime is expected to lead to an assimilation effect--i.e., the evaluation judgment made with respect to the target object should be in the direction of the prime. However, if the priming is "extreme" (Herr 1989) and/or the subject is consciously aware of the primed evaluative dimension (Lombardi, Higgins and Bargh 1987; Martin 1986), there is likely to be a contrast effect; that is, the evaluation judgment made with respect to the target object should be *away* from the direction of the prime. In effect, the results relating to evaluative priming effects appear to show that if the subject is aware of a priming event at the time of judgment, then s/he adjusts his/her judgment away from the consciously accessible prime. If s/he is unaware of the prime, then there is an implicit memory effect in that it tends to be used in a subsequent judgment if relevant.

It should be noted that in this thesis, my interest is in priming influences on retrieval rather than priming of judgments. The notion of "category accessibility" refers to the evaluation stage of the consumer choice process. The interest in this thesis is on priming effects on evocation.

Encoding-retrieval interaction

One well established finding in the memory literature is that information retrieval is contingent on encoding (Tulving and Thomson 1971, 1973). Retrieval is facilitated if the conditions at retrieval reinstate those present at encoding (e.g., Blaxton 1989; Roediger, Weldon and Challis 1989; Tulving and Thomson 1971, 1973). First described as the encoding specificity principle (Tulving and Thomson 1973), the finding was that retrieval is facilitated if the cues that were present at encoding are reinstated at retrieval. Since this work, there have arisen at least three different dimensions to the encoding specificity; viz, cue specificity, state specificity and process specificity. The three are considered in the following.

Cue specificity. This relates to the first described phenomenon by Tulving and Thomson (1973). Using a list learning paradigm, Tulving and Thomson demonstrated the failure of subjects to recognize words accompanied by strong associates that were recallable if cued with an "input cue" which is the word with which they were associated in the learning task. The provision of extralist cues did not facilitate recall as much as the provision of the input cues. Tulving and Thomson (1973) referred to "the totality of the conditions determining the encoding of a perceived item as its cognitive environment" (p. 369). They further recognized that their specification of the nature of the conditions that comprise encoding specificity was not particularly complete.

Nevertheless, there have been at least some marketing applications of the encoding specificity principle based on the provision of cues at retrieval that correspond to cues present at encoding. An interesting early demonstration of cue specificity was reported by Dickson (1972) who found that using point of purchase advertising related to television advertising significantly increased sales. More recently, Keller (1987, 1991a) has conducted a number of experiments demonstrating the importance of what he calls "cue compatibility," which relates to the improvement in recall of ad information if ad cues are provided on the package.

State specificity. Frequently referred to as state dependence, the concept is that the mood or state of the individual at retrieval influences their retrieval of information. There appear to be two components to state dependent memory. First, in line with the notion of encoding specificity, it has been demonstrated that material learned in one state, say when drunk, is best retrieved in a similar state rather than a different state (Goodwin et al. 1969). Eich (1989) speculates that the influence of state dependent behaviors (e.g., drink induced, drug induced) may be mediated by mood.

A second component of state dependent memory is the influence of mood on what is retrieved within a situation. Isen et al. (1978) induced a positive mood in people in a shopping mall by giving them a free gift. In a later apparently unrelated consumer survey, those receiving the free gift rated the performance of their cars and their television sets higher than did controls. Positive affect appears to beget positive thoughts. People appear to retrieve mood related material. These results are similar to those of Donovan and Rossiter (1982) showing that "approach" behaviors increase in response to situational factors that increase pleasure and arousal.

Process specificity. A final dimension of encoding specificity that recently has begun receiving attention is that of correspondence between the nature of processing at encoding and the nature of processing at retrieval (Blaxton 1989; Roediger et al. 1989). Two types of processing are distinguished--data driven tasks (those relying more on the analysis of the physical features) versus conceptually driven tasks (those requiring the processing of meaning). Blaxton (1989) found that data driven retrieval tasks (e.g., word fragment completion and recall using graphemic ("sounds like") cues) are best performed when subjects read rather than generated the items to be learned at input, and when the physical features of study and test items matched in terms of modality and typography. Conceptually driven retrieval (semantically cued recall and general knowledge) was enhanced when study items were generated rather than read and when subjects formed mental images of the to-be-remembered items.

It should be noted that the data driven versus conceptually driven distinction at retrieval bears a close resemblance to the distinction made between stimulus-based versus memory-based consumer decision making. Furthermore, data driven versus conceptually driven processing is similar to the levels of processing/elaboration approach to encoding which is generally thought to reflect involvement. Under the peripheral route to persuasion, the consumer tends to process only superficial features of the advertisement itself; under the central route to persuasion, the consumer elaborates more in processing the meaning of the advertisement (Petty and Cacioppo 1983; Petty et al. 1983).

Overall, it is now well recognized that retrieval assumptions cannot be considered in isolation from encoding assumptions (e.g., Srull, Lichtenstein and Rothbart 1985, p. 327). However, the range of conditions on which it may be important for retrieval to match encoding is clearly a complex issue.

Summary

This chapter has reviewed a range of literature relating to brand choice and brand evocation--in particular, the role of memory in brand evocation. The basic model of brand choice that has been adopted is one comprising two stages, namely evocation and evaluation. In terms of the role of memory at the evocation stage, research into the structure of memory, and more particularly, research into the "strength" or accessibility of a concept in memory has been reviewed and discussed. The following chapter will seek to integrate the findings reported in the literature and develop the conceptual background that supports this research project.

CHAPTER 3
CONCEPTUAL DEVELOPMENT

In the last chapter, a range of topics were reviewed that related to the issue of brand evocation by consumers and its relationship to brand choice. This chapter draws on the various literatures that have been discussed in developing a model of how brands come to be included in the consumer's evoked set. The model develops an understanding of how brands come to mind; ultimately, this will enable manipulation of brand awareness. Propositions and hypotheses arising from the conceptual development will be specified in the course of the discussion.

The key concepts developed to this point are that brand equity is apparent when there is a high probability of brand choice aggregated across consumers and sustained across time. Brand choice is considered to be a function of (1) brand evocation and (2) given brand evocation, brand evaluation. Brand choice (brand equity) reflects the extent to which brand evocation and/or brand evaluation are biased in favor of a brand over the long run. In view of the neglect of the importance of evocation in choice, this thesis explores the role of brand evocation, and in particular, the dependence of brand evocation on (1) the cues that are present in the retrieval situation, (2) the strength of the association between those cues and the brand, and (3) the development and/or strengthening of an associative link between a cue present at retrieval and the brand. However, before launching into a discussion of brand evocation, it is appropriate to first a basic notion of the "structure" of brand memory to distinguish between brand memory in evaluation and evocation.

Brand Memory

Associative Structure of Brand Memory

Adopting the notion of memory structured as an associative network (see Anderson 1983a, 1983b; Anderson and Bower 1974; Collins and Loftus 1975; Quillian 1967), the brand is conceptualized as being the central node linked with a bundle of associates. Meyers-Levy (1989b) uses the useful concept of an "association set" to refer to "the concepts that are meaningfully related to a target word or brand name" (p. 197).

A diverse array of brand associates may be stored in consumers' memory. Hutchinson and Moore (1984) note that there are a variety of "traces" or associates that can be elements of the brand's association set resulting from exposure to advertising for a brand such as ad-specific, brand-related (evaluations and attributes) and recipient-generated thoughts (cognitive responses). Smith, Mitchell and Meyer (1982) would add general consumption and purchase situations, as well as specific consumption, purchase and communication experiences (episodes) and categories. Brucks (1986) gives a fairly comprehensive list of the kinds of information that a consumer can have, and amongst these kinds of knowledge, she considers information associated with a brand such as brand facts (including attribute beliefs and overall evaluations), general usage and personal usage experience (episodes). Aaker and Keller (1990) suggest that, in addition to attribute associations, a brand can have an association with a use situation, a type of product user, a place, a product class (p. 28) and an overall brand attitude (p. 29). One of the more recent conceptualizations of the kinds of associates that are linked to a brand in memory has been provided by Keller (1991c). He argues for recognition of three types of brand associates, all of which are typically important in terms of the notion of brand equity as a function of the associates that are evoked by the brand--viz, attributes (or features), benefits and attitudes.

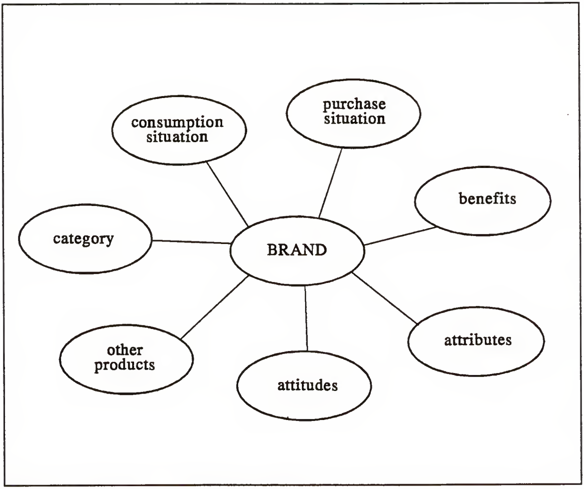


Figure 3-1: Model of the Brand and its Associates

Summarizing these various conceptualizations of the types of associates linked to a brand, I propose that brand memory be considered an associative network as illustrated in Figure 3-1. The associates that have been included are consumption situation, purchase situation, benefits and attributes (both unique to the brand and common to all or most brands in the category of which it is a member), attitudes, product category and other brands.

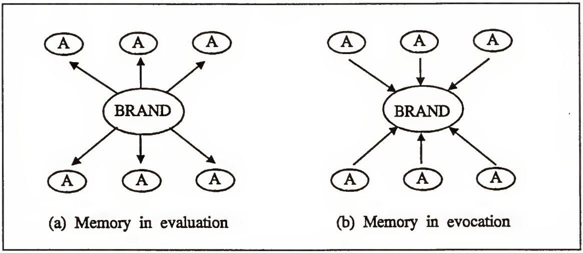
The representation is intended to be thought provoking rather than comprehensive. The associates that have been included represent those that are considered to be most likely to have a role in brand choice. Some points that should be noted are as follows. First, the links between the brand and associates may be direct or indirect. For instance, "other brands" are very likely to be linked to the target brand through a subcategory (e.g., Nedungadi 1987, 1990). Second, both purchase and consumption situations are likely to comprise a number of elements, and may be indirectly linked to brands through associates such as benefits related to attributes. The operation of situation as a cue will be discussed later.

Brand Memory in Evocation and Evaluation

In general, the notion of memory in evaluation is understood to be a function of the associates that are retrieved to support the evaluation stage of the consumer choice process (e.g., Alba, Hutchinson and Lynch 1991; Lynch and Srull 1982; Meyers-Levy 1989b). In this respect, the perspective taken by those investigating brand memory and evaluations is a brand-to-associate view (see Figure 3-2a). In this perspective, the attention is generally on the associates evoked rather than the cues doing the evoking; this is because the brand can be considered the central cue. However, Keller (1987, 1991a, 1991b) has demonstrated that memory of brand associates is facilitated by the provision of advertising-related cues in addition to the brand. The associates retrieved that receive most attention in the consumer behavior literature are attitudes and brand attributes (e.g., Biehal and Chakravarti 1983, 1986; Lynch, Marmorstein and Weigold 1988).

It is proposed that a focus on brand evocation requires a reverse perspective on brand memory. That is, in examining the role of memory in brand evocation, it is necessary to examine those associates that lead to retrieval of the brand (see Figure 3-2b). Additionally, whereas brand evaluation focuses on what is evoked (namely associates such as attitudes and attributes) rather than the cues, research on brand evocation needs to focus on the cues, with the brand being the evoked object (i.e., the associate-to-brand linkages).

In terms of the different perspectives on brand memory, the brand evaluation perspective tends to dominate consideration of the influence of memory on choice. This is reflected in the



(a) Memory in evaluation

(b) Memory in evocation

Figure 3-2: Two Perspectives on Brand Memory: Evaluation Versus Evocation.

common definition of brand equity at the consumer level as consisting of the associations evoked by the brand. From this point of view, brand equity comprises the complex of associations that make up brand image, reputation, and evaluations (e.g., Aaker and Keller 1990; Farquhar 1989; Leuthesser 1988; Tauber 1988). The argument that is made in this thesis is that the alternative process that underlies brand evocation also must be examined. The perspective that brand choice is dependent on brand evocation is explored in more detail in the following.

Consumer Memory Used in Brand Choices

The literature review (Chapter 2) identified two memory distinctions that are particularly relevant to our understanding of the role of consumer memory in brand choice. The implicit/explicit memory dichotomy distinguishes between memory as a tool and memory as an object, respectively (Jacoby and Kelley 1987). In this thesis, the focus is on memory *used* as a tool by consumers in making choices, rather than the demonstration of memory as an object. That is, while consumers may be able to show that they remember something such as the brand, it is of not much importance if, within a choice situation, they do not retrieve that brand from memory. In essence, the assumption that explicit measures of memory reflect memory used in choice is questioned in this thesis.

Related to the implicit/explicit dichotomy is the episodic/semantic distinction. As noted earlier, episodic memories are explicit; semantic memories may be explicit or implicit. It is my contention that episodic memories are not the only form of memory used by consumers. In particular, I argue that the effects of marketing communications on brand evocation are often mediated by implicit, semantic memories, and not by episodic memories that are the focus of most measures of the effectiveness of communications.

At the level of evaluation, an episodic memory is likely to affect brand choice by "indirectly" cuing associates such as attitude (e.g., "I ate 'Krystals' once and it made me sick") and attributes (e.g., "I saw an ad for 'Fanta' last night and the ad said it is available in orange flavor"). Advertising and communication research typically measures recall of brand information from a novel advertisement with an advertising exposure prompt (e.g., Berger and Mitchell 1989; Keller 1987; Singh and Rothschild 1983). This approach assumes that these measures accurately reflect the ecological use of memory. This communications research paradigm assumes that consumers see a brand, try to remember seeing or hearing some communication about the brand, and then retrieve the relevant brand information that was communicated. Ideally, advertising effects on memory for brand information should be measured in response to an ecologically appropriate cue (e.g., a purchase situation)--whether episodic or semantic memory mediates the effect is irrelevant.

In evocation, an episodic memory may serve as a cue although it will likely be one in a chain (e.g., "Hmm--I need a place to stay. What was the hotel that I saw advertised last night as having a special on room rates?"). In this respect, it may be seen that an episodic memory is just one route to memory for a brand. Furthermore, it is likely to be a mediating link rather than the initiating link. The most important example of consumer use of episodic memory is when s/he tries to recall what was purchased or consumed last time. This seems likely to happen in two situations. First, this tends to happen in choices where the consumer is seeking variety (e.g., "Where did I have lunch yesterday?"). Second, an episodic memory may be used as a simplifying choice heuristic in cases where it would appear easier, and satisfactory, to recall the last brand purchased/consumed rather than direct the search via some other route.

Overall, it is thought that the identification of episodic associates is both unnecessary and misleading in terms of the implications for our understanding of the consumer's brand choice process. In particular, in evocation, episodic memories may mediate links from the initial cue to the brand, but are not likely to be the initiating cue.

Associates Influencing Brand Evocation

Brand choice is argued to be a function of the "brand-to-associates" links and by "associates-to-brand" links. Most researchers consider only the brand-associate links which underlie evaluations within the brand choice process. However, modeling brand choice as a function of associates evoked by the brand examines only half the issue--or less, given that many brands available are not included within the evoked set. In effect, it is argued that the associate-brand links underlie evocation, while the brand-associate links underlie brand evaluation and, ultimately, choice from the evoked set. Consequently, associates of a brand will be retrieved and examined only if the brand itself has been included in the evoked set.

Therefore, attention needs to be given to the associate-brand links, because it is posited here that associates act as "cues" for retrieval of the brand in the purchase or consumption situation. That is, brand choice is modeled as a function of the brand(s) evoked by specific associates. Evoked sets are likely to be a function of the complex of cues that make up the goal at the time of evocation. Consequently, an important priority is to investigate what are the cue constellations that instigate purchase and/or use of a specific brand. In effect, attention needs to be directed at the important issue of what evokes the brand in a choice situation.

> Proposition 1: Brand retrieval is a function of the specific brand associates that are activated and thus act as cues in the purchase or consumption situation.

This proposition will be explored in the following discussion. Specific hypotheses arising from the conceptualization of brand evocation as a function of retrieval situations will be proposed.

Situational Factors Affecting Evocation

The formation of the evoked set in the choice situation is guided by two conceptually distinct sets of situational factors that affect brand salience and brand retrieval. Salience, or what Moran (1990, p. 12) calls "physical presence", refers to the features of the situation that draw attention to a brand independent of any effect on memory. These are the features of a situation such as display size, shelf position (eye level versus floor level) and special displays (e.g., end aisle, non-price promotion) that result in the brand being included in the evoked set. The independence from memory is apparent in that even unknown brands will benefit from salience.

The other set of situational factors that guide the evocation process are those features of the choice situation that affect brand retrieval or what Moran (1990) calls "mental presence[6]." Due to the traditional view of evoked sets as static, the notion of cues to brand evocation tends not to be considered. If the notion of cues is considered at all, most consumer choice models assume that product "category need" precedes brand evocation (Rossiter and Percy 1987; Warshaw 1980b), and the category label is presumed to be the only cue guiding evocation. In fact, situations contain a rich variety of cues that might lead to different brands coming to mind. For instance, consider the types of drinks that come to mind in the following situations: a party, after mowing the lawn, after a game of tennis, after getting up in the morning, etc. While many have recognized that situations can influence choice (Belk 1974, 1975a; Lutz and Kakkar 1975, 1976), the typical interpretation is that situations operate at the evaluation stage of brand choice by affecting attribute importance (e.g., Berkowitz, Ginter and Talarzyk 1977; Miller and Ginter 1979) or as a result of simple stochastic variation (McAlister and Pessemier 1982). Only recently have researchers come to recognize that situations may have a powerful influence on brand choice by manipulating the brands included in the evoked set (e.g., Baker et al. 1986; Hauser and Wernerfelt 1990; Nedungadi 1987, 1990; Ratneshwar and Shocker 1991).

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[6] Moran (1990) uses the term "mental presence" as the complement to his term "physical presence". However, his notion of mental presence reflects the result of communication devices. My own sense is broader in that mental presence can be the result of more than simply marketing communications--experiences with the product in both purchase and consumption situations also contribute to mental presence.

Situational factors that operate by making the brand salient or by facilitating retrieval of the brand will all bias evocation. However, only those that facilitate retrieval can be argued to offer any sustainable opportunity to bias brand choice. If choice is affected only in the short run, then brand equity is not affected. A parallel notion from the evaluation perspective is that while a price promotion can lead to more favorable evaluations of a product for the duration of the promotion, the resultant increase in brand choice does not reflect any real change in long term equity.

Brand salience relates to features of the situation that influence perception and attention in the evocation situation. Any tool used by one brand to increase salience can easily be used by another brand; thus, advantages won in terms of salience are likely to be short term and do not secure a sustainable competitive advantage for the brand. Brand retrieval, on the other hand, represents a distinctively more powerful phenomenon in that cues that are effective in activating memory for a brand cannot easily be used by another brand. Memory for the brand is like an attitude in that it represents a hypothetical construct having long term implications and is less subject to modification by competitors. In effect, using situational features to facilitate brand retrieval is actually a strategic tool; using situational features that do not tap memory effects and which simply operate through brand salience represents a tactical approach that can be competed away easily.

Consequently, brand equity will be reflected by favored choice in a variety of situations unless there is one situation in which most choices take place. Therefore, if brand choice is being influenced by brand evocation, we would expect to see that frequently chosen brands tend to be evoked more readily than other brands in a variety of situations. The predictions that follow from this argument are:

H1a: More frequently chosen brands are evoked by a cue that is common to a variety of situations; and/or

H1b: More frequently chosen brands are evoked by a variety of cues with each cue being specific to one or more choice situations.

Brand salience is likely to be more of an issue in stimulus-based brand retrieval than in memory-based brand retrieval (i.e., evocation). Brand retrieval will be influenced by situational factors in both stimulus-based and the memory-based situations. While it was argued earlier that memory will also play a role in stimulus-based brand retrieval, the nature of the memory in stimulus-based brand retrieval is different from memory-based retrieval. Stimulus-based retrieval is complicated by the fact that (1) the memory process is best described as an "ease of recognition" phenomenon; (2) the brand name itself, is present as a "cue;" (3) both brand salience and brand retrieval may be affected by one situational factor (e.g., a in-store banner that simply mentions the brand name); and (4) the "brand" to be retrieved in the stimulus-based situation refers more to visual memory (i.e., memory for the appearance of the name, the package design, the logo, etc.) Consequently, in the following conceptualization and the studies to be described, the focus will be on memory-based brand retrieval or evocation. This not to suggest that stimulus-based retrieval is unimportant; however, it is desirable to work from the apparently simpler, clearer process to the more complex one

Evoked Sets as Context-Dependent, Goal-Derived Categories

Recently, a number of researchers have criticized the fact that the evoked set has typically been thought of as relatively static (Alba et al. 1991; Nedungadi 1990). In addition to these comments from consumer memory researchers, recent research on the evaluation of non-comparable alternatives has alerted researchers to consider that evoked sets may be composed of alternatives from different product categories (Corfman 1991; Johnson 1984, 1988). In general, evoked sets are conceived of as sets of brands that are generated or retrieved in response to a product category cue (e.g., Alba and Chattopadhyay 1985a, 1986; Hutchinson 1983). Underlying this longstanding concept are the assumptions that: (1) evoked sets are common taxonomic categories; and (2) evoked sets are relatively static and do not change in response to changes in context. I propose that that these assumptions about evoked sets should be replaced by the notion that evoked sets are better described as goal-derived categories that vary by context.

Barsalou (1983, 1985) provides a useful distinction between common taxonomic categories and goal-derived categories. Barsalou (1985, p. 633) points out that common taxonomic categories are often used for classification, whereas goal-derived categories are often used for instantiation. Thus, evoked sets, in which people generate (instantiate) alternatives in order to achieve some consumption goal, bear an important resemblance to goal-derived categories. When people shop in a supermarket for a meal for that evening, they may not think in terms of product categories, but rather in terms of different meals which satisfy their needs such as variety, economy, preparation and "fit" with things already at home--e.g., pizza which means buying a prepared crust and the toppings that are needed, or chili which means buying ground beef and the necessary spices or a mix, or spaghetti which means buying spaghetti, ground beef and/or spaghetti sauce, etc.

In one of the few investigations of goal-derived categories in consumer research, Loken and Ward (1990) suggest that product categories have the characteristics of both goal-derived and taxonomic categories. However, in their work, they considered the structural characteristics of exemplars evoked by category labels. It might be anticipated, therefore, that sets of brands generated in response to a cue other than category may have more characteristics of a goal-derived category than sets generated in response to the category as cue. Accordingly, it is predicted that:

> H2: Evoked sets generated in response to cues (other than product category) resemble goal-derived categories rather than common taxonomic categories.

Retrieval Cues

Before discussing the various cues that might serve to cue brands in choice situations, it is important to note that cues differ on at least two dimensions. First, the retrieval cues may be either self-generated or externally generated (Lynch and Srull 1982). Internally generated cues (e.g., thirst) are presumed to operate in the same manner as externally generated cues (e.g., someone asking you to join them for a drink), and are presumably just as powerful. Internally generated cues are likely to be more characteristic of consumption sitatuations rather than purchase situations. Nevertheless, they will be present in the purchase situations to the extent that the consumer uses the anticipated consumption situation as a cue for purchase. Indeed, the motive to purchase some "kinds" of products (e.g. dinners, breakfast foods, etc.) is a particularly relevant internal cue in the purchase situation.

Second, some cues may work directly to evoke the brand while others may work indirectly. For instance, thinking of the feature, caffeine, may directly evoke Coke. A situation such as going to an early morning lecture may indirectly evoke Coke via a chain of associations: early morning lecture ---> need to stay awake ---> caffeine ---> Coke. Frequent instantiations of this indirect link may make the brand Coke more accessible in the cuing situation, early morning lecture. An example of another indirect link is that explored by Nedungadi (1987, 1990) of a brand cuing another brand. In particular, Nedungadi (1987) hypothesized and found that priming with a brand could lead to activation of a subcategory and, subsequently, activation of accessible brands within that subcategory.

Product category and other brands

Two cues that are present in many retrieval situations and which have received consideration in consumer research are product category and other brands. First, evocation in response to a category label or the "category production task" (Gruenewald and Lockhead 1980) has sometimes been considered "the most relevant experimental paradigm in memory research for understanding product recall" (Alba et al. 1991, pp. 5-6). Unfortunately, the value of this paradigm in exploring notions of evocation is limited, because product category represents only one of the constellation of cues present in retrieval situations. The major problem is that the application of the paradigm in consumer research assumes that consumers search for brands using the product category as cue.

The composition of an evoked set depends critically on the set of cues that are salient at the time of evocation. The idea that an evoked set is generated in response to a product category cue implies a static, context free, common taxonomic category. Even if the category is provided as a cue, other cues present within the situation will affect the brands that are included in the evoked set relative to a retrieval situation where the category is provided as the only cue, or the category is provided, but within a different context incorporating different cues. For example, Roth and Shoben (1983) clearly showed that the "graded structure" of the category of birds was changed if a context was added (e.g., "The hunter shot at the 'bird' flying overhead"). Consequently, even if the product category is used as a cue, the brands included in the evoked set will be also a function of other cues present within the context. A corollary to this is that the contents of the evoked set generated in response to the product category cue alone need not necessarily accurately reflect the brands that will be included in the evoked set in response to the product category cue within a context incorporating additional cues.

> H3: Evoked sets generated in response to a product category cue vary as a function of other cues present within the context.

The second cue that has received some consideration is the brand itself as a cue for other brands (e.g., Alba and Chattopadhyay 1985a, 1986; Nedungadi 1987, 1990). The attention to brand as cue is important, but a brand represents a special type of cue. In general, it seems likely that the brand provided is likely to cue the category, which in turn acts as a cue for other brands. In one sense, this cue does not move our thinking beyond the category production paradigm. Nevertheless, research examining the brand as cue has led to some new insights on possible evocation processes. Alba and Chattopadhyay (1985a, 1986) show that the provision of brands as cues can facilitate brand recall if the brand cues an unretrieved (sub)category, but inhibits brand recall in accessible categories. The result showing inhibition of recall of examplars in an accessible category demonstrates that the part-list cuing effect from the memory research literature (Slamecka 1968, 1969) generalizes to the domain of consumer categories, namely products.

However, Nedungadi (1987, 1990) found that provision of a brand as a cue could provide both a "direct" effect and an "indirect" on the brands included in the evoked set, but no part list cuing inhibition effect was observed. Specifically, unobtrusive priming of a brand was found to increase the probability of evocation of the primed brand (direct effect). Furthermore, and more subtly, when the prime was a minor brand in a minor category, the prime indirectly increased the probability of retrieval of the major brand in that minor category; in effect, the minor brand cued the category, which in turn cued the major brand. This result did not arise in the major category, presumably because the category itself was already highly accessible. For instance, priming with Simpatico might be expected to increase evocation of each Corona and Simpatico in recall of beer brands, both representing the minor subcategory, Mexican beers. On the other hand, priming with Coors would not be anticipated to increase evocation of Budweiser. It is noteworthy that the only brands benefiting reliably from priming at the choice level were the major brands in the minor (sub)categories. Priming did not reliably affect choice of any other brands (Nedungadi 1990).

Nedungadi (1987, 1990) appeared to find the facilitation effect described by Alba and Chattopadhyay (1985a) in that brands could cue other brands by the cuing of an unretrieved category. The failure to find any inhibition effect was expected by Nedungadi (1987) as inhibition effects are typically in evidence in categories where there are large numbers of items in the category, and where numerous exemplars are listed as cues. In addition, part list cuing effects have been demonstrated in studies where subjects must recall as many items as possible--although the dependent measure may be the proportion of a target group such as the best known brands (see Alba and Chattopadhyay 1985a). Subjects in Nedungadi's studies were asked to generate evoked sets which tend to be constrained in size[7]. They were then asked to recall as many more brands as possible. If an inhibition effect were to arise, it would likely be at this point; but at this point the evoked set (which would be the same size on average across cuing conditions) would itself provide a substantial part-list cue resulting in inhibition of subsequent recall.

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[7] Hauser and Wernerfelt (1990) list the mean or median consideration set sizes from published research studies which shows a range 2.2 to 8.1 brands in evoked sets. The vast majority (over 80% of those listed) contain fewer than five brands.

H4: Cuing with other brands leads to an "evoked set" equivalent to that cued by the (sub)category cue.

Purchase and consumption situations

Consumers make brand choices in both purchase and consumption situations[8]. Both situations represent a complex of cues that may serve to guide retrieval of brands for inclusion in the evoked set. There is little dispute that brand choice varies by situation (Belk 1974, 1975a; Kakkar and Lutz 1975; Sandell 1968), but the nature of the influence has not undergone thorough investigation. As noted before, most attribute the variation in brand choice by situation to be a result of changes in attribute importance by situation (Berkowitz et al. 1977; Miller and Ginter 1979).

However, it seems likely that in addition to any change in attribute importance, the probability of evocation is likely to change across different situations. In effect, there is likely to be an influence of what Belk (1975a) called "subtle cuing effects" (p. 161). Some support for the notion may be taken from the categorization research discussed earlier that revealed that categories vary by context (e.g., Barsalou 1985; Roth and Shoben 1983). Hence, consideration of the category cue alone is insufficient for understanding brand evocation. One of the more important cues to consider is the situation (or context).

H5: Evoked sets vary by the cuing situation.

As this hypothesis has received support from a number of consumer research studies demonstrating that brand recall varies by situation (Hutchinson, Mantrala and Raman 1991,

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[8] Keller (1991c, p. 6) includes "usage imagery (i.e., where and under what types of situations [a brand] is used" as a type of attribute. I have chosen to separate situations from attributes as they constitute a constellation of cues comprising attributes, benefits, attitude and category.

Nedungadi 1987, Ratneshwar and Shocker 1991), the next step is to further define the nature of the cuing influences of situations.

The important characteristics of choice situations are the goals underlying the consumer's choice. Thinking in terms of goals leads readily to consideration of goal-derived categories (Barsalou 1983, 1985) and Hypotheses 1 and 2. It is suggested that research aimed at identifying the situational goals that act as cues in the evocation process will provide more insight into the cues that guide consumer evocation. In particular, one element that represents an important cue and which has not been included in the associative model of brand memory is the consumer's underlying motives; that is, his/her needs and wants. Clearly, this should be a fundamental aspect given "marketing's first law: 'Don't sell what you happen to make; make what the consumer wants to buy'" (Fennell 1978, p. 38). More specifically, motives can be thought of as benefits and attributes desired. These and attitudes (the desire or motive for something satisfying) are considered in the following.

Attributes, benefits and attitudes

One of the points that has been made about the conceptualization being developed here is that brand associates used during evaluation may also be important to consider as cues in evocation. It has also been noted that attributes, benefits and attitudes are typically considered in terms of their influence on evaluation (Keller 1991c). For instance, attributes[9] of the brand have been considered as a means of discriminating among alternatives (e.g., Alpert 1971, 1980; Myers and Alpert 1968). These so-called "determinant" attributes are defined as "those attributes projected by the product's image which lead to the choice of that product . . . they determine preference and purchase behavior" (Alpert 1971, p. 184).

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[9] For the following discussion, benefits, which Keller (1991c, p. 7) defines as the personal value that consumers attach to the product or service attributes, will be incorporated under the label "attributes." In effect, to the extent that a product is perceived by a consumer to fulfill some particular purpose or function, it may be said to have the attribute of providing that specific benefit.

However, independent of the role of attributes in evaluating alternatives, Nedungadi (1987) argued that "certain attributes or properties of brands are activated by each usage [consumption] situation and are believed to underlie the process of retrieval set formation" (p. 35). Nedungadi (1987) distinguished between cues used in evocation versus cues used in evaluation by labeling the former "cuing attributes." Nedungadi (1987) noted that the notion of attribute "salience" does not distinguish between whether attributes are salient (or activated) during the retrieval stage or during the evaluation stage. He notes that cuing attributes may be independent of determinant attributes; that is, the attributes used to cue brands may be different from the attributes used to evaluate brands.

Conceptually, a distinction between cuing attributes and determinant attributes appears to be a useful one; however, Nedungadi (1987) found some difficulty in finding cuing attributes via direct questioning. He suggests a possible reason for not finding cuing attributes was that the process of retrieval may be less deliberate than evaluation and subjects may not be able to list the attributes that were activated and served to cue a set of brands (Nedungadi 1987, p. 75). Nevertheless, an internal analysis revealed that cuing attributes were different from determinant attributes. In Experiment 2, Nedungadi (1987) set up some artificial stimuli (restaurants) in which the cuing attributes were uncorrelated with the determinant attributes and found support for his contention that cuing attributes influence brand evocation.

Like attributes, attitudes are typically considered to be used to discriminate between brands. However, it should be apparent from the research in goal-derived categories that evaluations can be used as a cue. Barsalou (1983, 1985) demonstrated that evaluatively valenced goal-derived categories can be constructed such as "personality characteristics in others that prevent you from being friends with them" and "foods not to eat on a diet" (Barsalou 1985, p. 651). Ecologically, it is likely to be exceedingly rare that a consumer would endeavor to recall brands that are associated with negative evaluations, and it is likely to be very common that consumers will endeavor to recall favorable brands. This may partly explain why more preferred brands tend to be recalled earlier (e.g., Nedungadi and Hutchinson 1985; Ward and Loken 1986). In general, it is anticipated that attitudes, like at least some attributes, tend to be used as a means to differentiate among brands at evaluation. At evocation, it appears that attitude plays a role as a cue, virtually a filter, to ensure that few or no disliked brands are included in the evoked set.

Overall, it is expected that, while certain brand attributes and attitudes may relate more to discrimination among evoked brands, other types of associates (e.g., product category) and other specific associates acting as cues within situations may be more influential at the evocation stage. Consequently, it is predicted that:

> H6: The brand associates used to distinguish between brands at the evaluation stage are distinct from the brand associates that are used to evoke brands.

Again, consumers are likely to generate different evoked sets in response to a product category cue depending on the benefits and/or attributes made salient. In addition, it seems likely that attitude might serve as a cue. However, as mentioned above, it seems unlikely that there are many instances where people would generate evoke anything other than positively evaluated brands. Therefore, in the same way that situation influences the process of evocation (H5), it is hypothesized that:

> H7: Evoked sets vary by the cuing benefit(s).
>
> H8: Evoked sets vary by the cuing attribute(s).

Measures of Brand Accessibility

A fairly basic notion in the memory literature is that the process of retrieval does not necessarily reflect what is "stored" in memory. Specifically, an item may be stored in memory, but may be retrievable only if a person is provided with the appropriate cues. For instance, when prompted for sodas, a person may fail to recall some brands such as Fanta. However, if shown the brand, the person will immediately recognize it. Furthermore, if cued with "root-beer flavored drinks," or "sodas beginning with 'F'," the retrieval of the brand probably would have been facilitated. Hence, the brand Fanta is "available," but is only "accessible" under certain conditions (Tulving and Pearlstone 1966; Tulving and Psotka 1971). The notion of accessibility can be thought of as the strength of the cue-object link; a strong link facilitates retrieval of the object upon presentation of the cue.

Given studies that have shown differences in evocation as a function of different usage situations (Hutchinson, Mantrala and Raman 1991), and given the proposition that selective evocation is a function of the cues present in the situation, it is now proposed that the reason for variation in brand evocation is that different associates may have stronger links to some brands than others. The result is that any given associate evokes some brands with greater probability than others. This line of reasoning leads to the following proposition:

> Proposition 2: Probability of brand retrieval depends on the strength of the associate (cue) to brand link.

Brand Accessibility

In the same way that numerous researchers have suggested and demonstrated that brand evaluation is a function of the accessibility of brand associates such as brand information (Biehal and Chakravarti 1983, 1986), attribute information (Alba and Chattopadhyay 1985b; Lynch, Marmorstein and Weigold 1988) and evaluations or attitudes (Fazio, Powell and Williams 1989; Feldman and Lynch 1988; Lynch et al. 1988), it is proposed here that evocation of a brand is a function of the accessibility of that brand. The brand is the "cue" from which brand-associate accessibility is measured, while brand accessibility can be measured in response to a variety of "cues." In effect, brand evocation is only one measure of brand accessibility. As such, it is anticipated that brand evocation should be related to measures of brand accessibility based on reaction times such as those used by Fazio and colleagues (e.g., Fazio et al. 1989) in the measurement of attitude accessibility.

Herr et al. (1990) and Fazio (1990) report unpublished research conducted by Fazio revealing that three separate estimates of the strength of association from the product category label to the brand were positively related. The three measures were taken on three different groups. The three measures were evocation (recall of members of a specified product category), response time to verify a brand as belonging to a given category, and a "priming-recognition task" (Herr et al. 1990). In the priming procedure, subjects were not responding to a direct query regarding category membership, but were primed with the presentation of the category label, and then time taken to identify or "recognize" a brand name as it gradually became apparent on the screen was measured. Based on these arguments and findings, it may be hypothesized that:

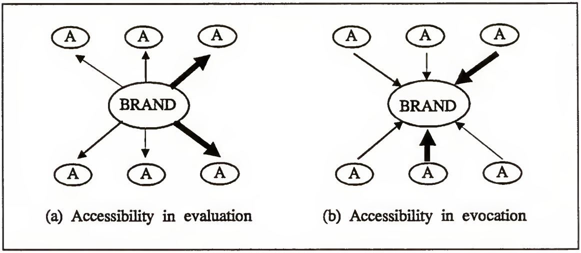
> H9: Brand evocation is positively related to measures of brand accessibility based on reaction times.

In the review of literature (Chapter 2), it was noted that accessibility is a function of three memory-related factors: encoding, organization and retrieval. However, the focus of this thesis is on retrieval-related factors affecting accessibility for two reasons. First, memory researchers have come to recognize that retrieval conditions are critical in assessing memory (Tulving 1974, 1983; Ratcliff and McKoon 1989), and it is the cues in the memory situation that determine what will be accessed. Specifically, "memory cannot be assessed independently of retrieval, and a theoretical description of memory cannot be formulated without specification of the retrieval environment" (Ratcliff and McKoon 1989, p. 73). Consequently, retrieval is a particularly important issue to address in any research examining the effects of memory.

Second, consumer researchers have tended to focus on encoding effects (e.g., Sawyer and Ward 1979) and organizational effects (e.g., Alba and Hutchinson 1987) on accessibility of components stored in memory. From the point of view of retrieval of associates of the brand, such an approach is desirable given that the major cue in such situations is usually presumed to be the brand, and this cue is provided in testing accessibility of brand associates. However, from the point of view of evocation, such an approach seriously neglects the significant point that encoding and/or organizational effects on memory for the brand will have no effect unless the appropriate cues are present.

Asymmetry of Links

The model of brand memory (see Figure 3-1) may suggest that brand-associate links are essentially the same as the associate-brand links. It has been pointed out that a conceptual distinction must be made between the brand-associate and the associate-brand links, underlying evaluation and evocation, respectively (see Figure 3-2). However, even some of the earliest work on the notion of spreading activation (see Collins and Loftus 1975, for a summary) through associative networks recognized that "criterialities" or strengths of association may be asymmetric. Specifically, it may be highly likely that thinking about a particular situation will evoke a particular brand (e.g., thinking of something to drink while watching the Superbowl, Budweiser might be likely to come to mind), but thinking of the brand will not necessarily evoke that situation. The possibility of asymmetry in the strength of associative links is illustrated in Figure 3-3, where association strength is represented by the thickness of the links.



(a) Accessibility in evaluation (b) Accessibility in evocation

Figure 3-3: Two Perspectives on Brand Accessibility: Evaluation Versus Evocation.

Categorization research has long recognized that the strength of the link from an instance to a category is not necessarily related to the strength of the category to instance link (e.g., Barsalou 1983; Smith and Medin 1981; Tversky and Gati 1978). Barsalou and Sewell (1985) note that "a standard assumption in the memory literature [is] that relations can be asymmetrical in strength and that the direction processed more frequently develops stronger relations" (p. 650).

Already, some research in marketing may be interpreted as providing evidence of asymmetries in the strength of associate-brand links versus brand-associate links. Nedungadi (1987, 1990) shows that minor brands in a category are likely to lead to evocation of a major brand, but major brands are not likely to lead to evocation of the minor brand--where one brand is considered the associate and the other the target[10]. Similarly, Herr, Farquhar and Fazio

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[10] Substantively, the implication of asymmetry is unchanged if an indirect cuing effect is assumed; it is simply more difficult to identify the locus of the asymmetry. That is, the minor brand activates the minor subcategory which in turn activates the major brand in that category. The major brand in that subcategory probably activates the minor subcategory as readily as the minor brand, but the subcategory presumably does not activate the minor brand.

(1990) report preliminary evidence showing that the category-brand association is not necessarily equal to the brand-category association. However, in their conceptualization (see also Farquhar, Herr and Fazio 1990), they consider only category-brand links from the diverse group of associate-brand links that are likely to be used by consumers in a purchase or consumption situation. Furthermore, they do not consider the way in which the different links implicate two different components of the choice process--namely evocation and preference. In particular, the empirical work (Herr et al. 1990) does not consider the influence of the strength of the category (associate) to brand links on brand choice achieved through evocation independent of evaluation. Instead, the focus of attention is on the implications of the strength of the category-brand link for transfer of liking for that brand to brand extensions.

> H10: The strength of the associate-brand link (brand accessibility) is not necessarily equal to the strength of the brand-associate link (attribute accessibility).

Manipulating Brand Evocation

Prior propositions have suggested that evocation is essentially a function of associates present at retrieval (Proposition 1) and that selective retrieval of brands is a function of the strength of the associate-brand links (Proposition 2); an issue that remains is how cues can be used to facilitate brand evocation (or more generally, brand accessibility). Following from Propositions 1 and 2, it is anticipated that increasing the strength of the associate-brand links will increase brand accessibility, and so increase the probability of brand evocation. As has been noted, accessibility depends critically on the cues present in the retrieval situation. The interaction between encoding and retrieval conditions is essentially summarized in the principle of encoding specificity, which states that "what is stored is determined by what is perceived and how it is encoded, and what is stored determines what retrieval cues are effective in providing access to what is stored" (Tulving and Thomson 1973, p. 353). Consequently, the effectiveness of retrieval cues is a function of the cues that were present at encoding. The final proposition suggests that the construction of evoked sets is influenced by cues to the extent that those cues were present at the encoding of the brand:

> Proposition 3: Retrieval of a specific brand is facilitated to the extent that there is a match between the conditions at encoding and retrieval of the brand.

A more practical issue is one of how to use this principle in facilitating brand evocation. Perhaps one of the first ideas that comes to mind is to manipulate the cues that are present in the retrieval situation; that is, to ensure that cues which are known to evoke the brand are provided to the consumer in the retrieval situation. However, as has been noted earlier, in most consumption situations, marketers do not have control of situational cues. In most purchase situations, the cues provided by the marketer are likely to compete with an enormous number of other cues that are provided in the purchase situation.

A more subtle approach is to determine what cues are typically salient in choice situations, and for the marketer to associate his/her brand with those cues. In effect, the approach is one of increasing the accessibility of the brand to cues that are known to be present in the retrieval situation rather than providing cues in the retrieval situation that are known to facilitate brand accessibility. Accordingly, the attention here will be on creating and making stronger, the links between cues present in the retrieval situation and the target brands.

Encoding-Retrieval Interaction

As was discussed in Chapter 2, retrieval may be facilitated to the extent that there is an overlap between the conditions at retrieval and encoding. The notion of overlap of conditions is broadly defined and includes physical cues (e.g., Tulving and Thomson 1973), mood states (e.g., Eich 1989) and/or common cognitive processing at encoding and retrieval (e.g., Blaxton 1989).

Some theorists have considered the relevance of encoding specificity to marketing; however, they have examined the facilitation of memory for brand associates, not brands, provided by matching conditions at encoding and retrieval (Baker and Lutz 1988, Keller 1990). In effect, they have considered the role of encoding-specificity in mediating evaluation rather than mediating evocation. The suggestion here is that evocation of brands can be systematically influenced to the extent that cues in the retrieval situation match those present at encoding:

> H11: If a cue present at encoding is present in the retrieval situation (or vice versa), brand accessibility increases.

One implication of the encoding specificity principle is that a brand encoded in a variety of contexts or situations provides multiple cues for retrieval of the brand. This notion is captured in the encoding variability hypothesis (Unnava and Burnkrant 1991) which highlights the fact that retrieval is facilitated in more contexts by varying the encoding context. This is in contrast to the proposal by Meyers-Levy (1989b) who suggests that "as the number of associations linked to the brand increases, the weaker is the presumed strength of each linkage or retrieval path . . . and the number of competing associations that might be activated and interfere with brand name retrieval increases" (p. 198). However, these effects, collectively called fan effects (Anderson 1976, 1983; Reder and Ross 1983), refer to influence of the "fan" of associations from the cuing node, not the target node. In the current model, brand name is the target, and the fan of the cuing associate is the relevant fan. Hence, it is hypothesized that:

> H12: Encoding of the brand in various situations increases accessibility of the brand in more retrieval situations than does encoding of the brand in one situation.

Nevertheless, the existence of fan effects suggests that "fans" from the associates that are cues *are* important--even though the "fans" from the brands should be irrelevant to brand evocation. Specifically, associating a brand with a cue that already has many brands associated with it will do little to facilitate later retrieval of the brand in response to the cue:

H13: Encoding of the brand along with a cue, and later provision of that cue at retrieval facilitates brand retrieval only if few or no other brands are associated with that cue.

Encoding Influences

In the literature review (Chapter 2), it was noted that there are three well known encoding manipulations that facilitate brand accessibility. First, repetition has received considerable attention in the marketing literature (e.g., Sawyer and Ward 1979) and is a well established means of influencing brand attitude and increasing brand awareness (Rossiter and Percy 1987). Second, the levels of processing notion of Craik and Lockhart (1972) has also been extended to the marketing domain, although generally within the context of memory for brand associates used for evaluating the brand (e.g., Petty and Cacioppo 1981, 1983; Petty, Cacioppo and Schuman 1983). Finally, the order of presentation influences brand evocation, with first seen and most recently seen brands more likely to be evoked than others (i.e., primacy and recency, respectively).

Interestingly, these findings have not usually been considered as contingent on the encoding specificity principle. However, given the hypotheses just given discussing the importance of a match in the conditions at encoding and retrieval, the following hypotheses about how the associate-brand link can be strengthened, and so, brand accessibility heightened are proposed:

H14: Repetition of an associate-brand link increases accessibility of the brand only when that associate is present as a cue at retrieval.

H15: "Deeper" encoding (more central processing) of the associate-brand link increases accessibility of the brand only when the associate is provided as a cue at retrieval.

H16: The first brand linked to an associate, and the brand most recently linked to an associate, are more accessible than other brands only when the associate is provided as a cue at retrieval.

In view of the well established literature in marketing on the effects of repetition (Sawyer and Ward 1979) and the common use of this manipulation in varying attitude accessibility (Berger and Mitchell 1989; Fazio et al. 1989), interest in this thesis will be focused on repetition and its influence on brand accessibility. However, there are numerous ways in which repetition may be executed. In experimental settings, attitude accessibility is often manipulated by repeated attitudinal expression; that is, subjects are asked to repeatedly provide an evaluation of an attitude object (e.g., Fazio, Chen, McDonel and Sherman 1982; Fazio et al. 1989). A similar manipulation of brand accessibility can be achieved by repeatedly asking people to generate brands in response to a cue. In this sense, the repeated evocation of a set of brands in a given purchase or consumption choice situation is likely to lead to an increase in brand accessibility in response to the set of cues making up that situation. Each time the same cues are encountered, the same brands are likely to be evoked, with each repeated evocation contributing to the strengthening of brand accessibility. At least one of the reasons that the same evoked set is not generated time after time is that each situation contains different cues or at least a different combinations of cues.

However, accessibility may also be influenced through the communication exposure situation. Berger and Mitchell (1989) have shown that attitude accessibility can be increased through repeated exposure to an advertisement showing the brand. While not explicitly requiring subjects to repeatedly express their attitudes, each exposure is presumed to reactivate the attitude object and the associated attitude (e.g., Berger and Mitchell 1989). It is proposed that repeated exposure to an advertisement which shows the cue, and then the brand in association with that cue, will similarly increase the accessibility of the brand in response to that cue.

Brand Accessibility and Brand Choice

Finally, to close this chapter, we return to the relationship between brand accessibility and brand choice. As was described at the beginning of this chapter, the underlying model of brand choice adopted is one where choice is a function of both brand evocation and brand evaluation given brand evocation. In effect, manipulations of brand accessibility should have a direct influence in increasing the probability of choice of the brand. However, this influence is only in gaining inclusion of the brand in the evoked set. Thereafter, the choice of the brand depends on the evaluation of that brand relative to other brands that are evoked.

Previous research has established that brand awareness is a factor which appears to be a good predictor of brand choice (e.g., Axelrod 1968, Baker et al. 1986, Haley and Case 1979). Therefore, it is expected that any manipulations of accessibility should ultimately be reflected in brand choice. Accordingly, it is hypothesized that:

> H17: As brand accessibility increases and probability of inclusion of the brand in the evoked set increases, so does the probability of choice.

Brand evaluation is considered to be likely to have an influence only on brands included in the evoked set. Indeed, while increasing the accessibility of a brand is anticipated to increase the probability of its inclusion in the evoked set, brand accessibility is unlikely to be sufficient to guarantee choice unless the the brand is the only member of the evoked set. Selection of brands from the evoked set will be based on brand evaluations. Therefore, this conceptual development is looking at influences on brand choice that are prior to evaluation. Furthermore, there are no a priori reasons for assuming that brand evaluations will be influenced by manipulations of brand accessibility. Consequently, the final hypothesis is that:

> H18: The probability of choice of the brand is a function of brand accessibility, and brand evaluation contingent on brand evocation.

Summary and Conclusions

Brand choice at the individual level is argued to be dependent on evocation of the brand, and then will be influenced by evaluation of the evoked brands. Evocation is influenced by situational factors that are present at choice. Of particular interest, in terms of their long run utility, are factors that cue memory for a brand. Factors affecting brand salience are considered to have only short run utility.

The brands that are retrieved in a choice situation depend on the cues to memory that are provided within that situation. The types of cues that were discussed were product category, other brands, attributes, attitudes, and the purchase and the consumption situations. It is postulated that evoked sets bear a closer resemblance to goal-derived categories than to common taxonomic categories.

Cues vary in their strength of association to the brand, thereby influencing the probability of evocation in response to that cue. Furthermore, the strength of the associate-brand links may be different from the brand-associate links, implying that different associates may be important at evocation and at evaluation, respectively.

Finally, retrieval cues gain their ability to cue retrieval of the brand name from their presence at encoding. Encoding in various situations provides more cues leading to evocation of the brand, but only to the extent that the brand is relatively uniquely associated with each situation.

The conceptualization contributes a different perspective on brand equity. First, attention is shifted from evaluative associatives evoked upon seeing the brand to simple evocation of the brand in many choice situations. Further, the chapter details some of the retrieval factors that influence brand evocation--namely, types of cues, brand accessibility (versus associate accessibility), and the encoding-retrieval interaction.

A new insight to marketers is contributed in terms of the distinction between purchase and consumption situation. In particular, the brand has to be chosen in both situations for the marketer to be successful. Typically, the marketer can influence only the retrieval cues available in the purchase situation and must compete with a large number of marketer provided cues in the purchase situation. However, by establishing what cues are present and salient to consumers at retrieval, it is possible in the encoding situation, to link the brand to associates which are known to be salient in the purchase situation and/or the consumption situation. Finally, an implication for research arising from this conceptualization is that more effort needs to be made to measure advertising (and other communications) effects, at both an evaluation and an evocation level via non-episodic techniques.

In the next two chapters, studies designed to examine the three propositions and some of the hypotheses developed above are described.

CHAPTER 4
CUING AND MEASURING BRAND RETRIEVAL

Background and Purpose

A central focus of this thesis is on the relation between brands and brand-associates. However, while much previous research has examined "brand memory" in terms of what is retrieved with the brand serving as a cue (e.g., Biehal and Chakravarti 1983, 1986; Lynch et al. 1988; Meyers-Levy 1989a), the focus of this thesis is on the relation from the brand associate to the brand. That is, the focus is on memory of the brand itself rather than memory for aspects of the brand. As has been described earlier, the underlying notion for evocation of the brand is the same as for notion of evocation of brand associates.

Memory may be thought of in terms of the theory of spreading activation (Collins and Loftus 1975) which holds that when a node or concept is activated, activation spreads to all related nodes in memory. It is presumed that increased activation of related nodes in memory is reflected in an association or generation task. That is, subjects asked to list thoughts in response to a given cue word will list those words corresponding to nodes which are relatively strongly associated with the cue word. Therefore, the approach in most research in brand memory may be thought of as having focussed on the spread of activation from the brand node to related nodes. In this thesis, the interest is in the spread of activation from "other" nodes to the brand.

In the same way that a brand can lead to retrieval of a set of brand associates (Meyers-Levy 1989b), marketers talk of retrieval of a set of brands referred to as the evoked set.

Researchers have typically considered the evoked set generated in response to a product category. However, there are problems with accepting the "category production task" as the quintessential paradigm for understanding brand evocation by consumers.

For the most part, consumer researchers have typically assumed that consumer memory is structured in a hierarchical manner and organized by common taxonomic categories which are labelled with the product category. Apart from problems in defining the level which describes a product category (non-alcoholic beverages, sodas, colas, diet sodas, etc.) and the question of whether consumers use these labels, everyday experience warns us that the evoked set is not necessarily just a listing of the first products to mind within a product category. Recently, researchers examining issues relating to evaluation of brands have considered the problem of evaluating brands in a set of non-comparable alternatives. We should also be considering the notion of evocation of brands which are non-comparable, or at least, not necessarily from the same product category.

Some recent evidence suggests that consumers' evoked sets appear to have characteristics of a goal-derived category (Barsalou 1983, 1985). That is, the exemplars generated are from a range of categories rather than from just one category. Loken and Ward (1990) report research showing that product categories have some characteristics of both goal-derived and taxonomic categories; however, they provided subjects with the product category as the only cue. Consumers make choices in and for a variety of situations and research examining brands considered for various situations (Hutchinson et al. 1991; Nedungadi 1987; Ratneshwar and Shocker 1991) show that consumers do generate exemplars from a range of categories.

In general, the notion of evoked sets as a goal-derived category is one that is appealing given our understanding that consumer behavior is driven by needs or motives. From this perspective, it becomes apparent that evoked set should change as the consumer's needs or motives change. This is very much in line with recent thinking by consumer researchers wanting to reject the typical assumption of evoked sets as static (Alba et al. 1991; Nedungadi 1990) and is supported by research showing that evoked sets vary by situation (Hutchinson et al. 1991; Nedungadi 1987; Ratneshwar and Shocker 1991). In the context of spreading activation, it is presumed that situations activate various benefit and attribute nodes which in turn activate various brands. Therefore, it is anticipated that evoked sets will vary depending on the benefits and attributes that are activated. In this study, attention will be limited to situations and benefits; therefore, it is hypothesized that:

H1: Evoked sets vary by the cuing situation.

H2: Evoked sets vary by the cuing benefit.

Given the notion of brand memory structured as an associative network, it is appropriate to think of brand evocation as a measure of brand accessibility. In effect, brand accessibility refers to the strength of the link or association between some concept (cue) and the brand. From a methodological perspective, the concept of brand accessibility is similar to the concept of attitude accessibility. Interestingly, attitude accessibility has typically been measured using response time measures with individuals being placed on a continuum of attitude accessibility as a function of the latency of their responses to an attitudinal inquiry (Fazio 1990, p. 93).

The comparison between brand accessibility and attitude accessibility is useful and highlights the possibility of a response time measure providing a continuous measure of brand accessibility. One problem with brand evocation measures is that they do not provide an indication of the level of accessibility of the brand. It is possible to make at least an ordinal estimation of accessibility using rank of recall; however, this leaves a problem (important to marketers) of distinguishing between unrecalled brands with relatively high accessibility and those with relatively low accessibility. Furthermore, use of ranks does not provide any absolute indication of accessibility. For instance, the second (or even first) recalled in the category of chocolate drinks has a much lower accessibility than either Coke or Pepsi in the category of colas. This comparison of accessibility across cues becomes important when considering accessibility of the one brand in response to different situations and different benefits required.

It seems likely that a response time measure of brand accessibility should be achievable. Fazio (1990) has recently highlighted the importance of response times as measures of associative strength in memory and reports finding positive correlations between evocation and two different response time measures of the associative strength between a product category label and members of the category. Specifically, Fazio (1990) reports unpublished research showing that response time measures of associative strength in memory are highly correlated with a recall measure. In one of the response time measures using a priming paradigm, subjects were presented with a product category prime, and were subsequently asked to identify a visually degraded word. In a second response time measure, subjects were exposed to a product category label, and subsequently asked to verify whether the word that followed this cue represented a member of that category. It seems likely that this finding should be extendable to cues other than product category; for example, situations and benefits which are the focus of this study. Consequently, it is hypothesized that:

> H3: Brand evocation is positively related to other measures of brand accessibility based on reaction times.

The studies that are discussed in this chapter are preliminary to the testing of the main proposition in this thesis (Proposition 3, Chapter 3) which is that the development of links from associates to brands will facilitate subsequent retrieval of the brand in the presence of that associate. In effect, the associate which has had a link to the brand developed, will act as a cue for the brand. As has been noted, this is particularly powerful concept if a brand can be linked with situations, motives, benefits and attributes that tend to be particularly salient in the consumption and/or purchase situation. In effect, the marketer need not be so concerned with manipulating the salient cues at the time of choice, but more concerned with manipulating the brands evoked by cues that are known to be salient at choice.

In order to address this proposition, it is important to first identify the cues that are salient in the retrieval situation. This chapter first discusses two pretests that were undertaken to identify the cues that are likely to be salient to consumers in choice situations. Following this, a study examining two different measures of brand accessibility is described. As the two measures of brand accessibility were taken on different samples, this study can be thought of as two studies, each examining a different measure of brand accessibility. Subsequently (Chapter 5), brand accessibility is manipulated by linking the target brand(s) to cues which are known to be salient in choice situations.

For ease of reading, the remainder of this chapter is organized into four sections, one section briefly describing two pretests that were conducted, and then one section for each of the two effectively separate studies examining brand accessibility in response to cues and a final summary section. The first section discusses the pretests that were conducted in order to identify cues salient in choice situations. The second section discusses the brand evocation measure and the tests of Hypotheses 1 and 2. The third section discusses a response time measure which is a brand verification task, the results of which are compared with brand evocation in a test of Hypothesis 3. The results will be discussed at the end of each section, and a more general discussion of all the results is included in a final section.

Pretests

Two preliminary studies were conducted, both essentially aimed at determining the brand associates that were likely to have the capacity to act as cues to brand evocation. The first of these was a simple brand recall task administered to a large sample of people that tested a range of situation cues and a range of product-types. The second was a more qualitative study aimed at identifying brand associates other than situation which might be acting as cues at the time of brand evocation.

Prior to the execution of the qualitative study, a pilot study of 82 undergraduate students in marketing was conducted to test the meaningfulness of a range of situations and the facility of the subjects in generating brands and products in each product-type in response to the situation cues. Of a set of six product-types examined, two (newspapers/magazines and stores) were dropped and four (drinks, snacks, restaurants, breath fresheners) were retained for the qualitative interviews. In the course of the interviews, time constraints and the apparent "distance" from the situation cues to the product-type of breath fresheners resulted in this product-type being dropped from the qualitative interviews.

As a result of this pretest, all the studies described in this dissertation focused on a relatively constrained number of products, namely, drinks, snacks and restaurants. There is some prior literature reporting cues and associates that may be relevant to brand recall with respect to each of these broad product-types (e.g., drinks - Hutchinson, Mantrala and Raman 1991; Nedungadi 1987; snacks - Nedungadi 1987; Ratneshwar and Shocker 1991; restaurants - Nedungadi 1987). In addition, focus on these general products can be contrasted with research on situation effects on choice (as mediated by situation effects on evaluation) which have investigated the same, or at least related, products (e.g., beverages/soft drinks - Sandell 1968; Warshaw 1980a; snacks - Belk 1974; Kakkar and Lutz 1975; Lutz and Kakkar 1975; meals/fast food - Belk 1975a; Miller 1975; Miller and Ginter 1979).

The qualitative pretest used an exploratory, qualitative technique similar to the benefit laddering technique of Reynolds and colleagues (e.g. Reynolds and Guttman 1988). Subjects were asked to recall brands from three product-types[11], and four product-specific situations. Subjects, interviewed on a one-on-one basis, considered all three product-types in a random order. They were provided with one randomly selected situation cue for each of the three product-types. The four situations used as cues for each product-type are presented in Table 4-1.

Table 4-1: Product-Types and Situation Cues

	Product-Types		
	Drinks	Restaurants	Snacks
Situations	Weekend party	Late night	Missed breakfast
	In class	Weekday lunch	Watching TV
	Breakfast	Dinner	Road-trip
	Studying	Sunday brunch	After workout

Subjects were not constrained to one product-type in their initial responses to the situation cue; however, subsequent probes focused on the product-type targeted for interest for that particular cue.

A total of 15 undergraduate students from the marketing subject pool were interviewed, eleven females and four males. In an interview that lasted half an hour in most cases, subjects were exposed to each of the three situations first and asked to generate what will be called "situation associates." Subsequently, subjects were asked to focus on one particular product-type for each situation (see Table 4-1). Following brand evocation in response to the target product-types associated with each cue, subjects were asked to consider the evoked sets they had generated for each situation and were questioned in more depth about why the *group* of brands was evoked. The subsequent probes aimed at the identifying associative links from the situation to the brand in a procedure simliar to benefit laddering (see Reynolds and Guttman 1988).

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[11] The term product-type is used to distinguish the broad classificatory labels used in the studies described in this dissertation from more narrowly defined product category labels. For instance, the product-type, drinks, includes all drink product categories such as colas, beer, fruit juices, milk drinks, etc.

It was found that the identification of the features underlying or cuing recall appeared to be difficult for respondents. Two additional methods were used to assist subjects in identifying the cues leading to the evoked set that they generated. One was to have subjects explain why the group of products were "appropriate" to the situation that was given as the cue. In a second, more indirect method, subjects were asked to specify other situations for which the same set of brands was appropriate, and then to state why. These two latter techniques are similar to some that have been used by Srivastava and his colleagues (Day et al. 1979; Srivistava et al. 1984) to identify market structures based on usage situations.

The three major outputs from the interview protocols (1) situation associates which were elicited directly in response to each situation, (2) situation-specific evoked sets, and (3) situationally activated cues which was an attempt to have subjects identify the cues influencing the process of evocation. Examples of the situation associates (including brands and products) and the situationally activated cues generated in response to one of the situation cues are presented in Table 4-2. These responses are taken from the four subjects exposed to the situation cue, "after a workout."

It should be noted that the classification into the four groups of cues that are mentioned above and displayed in Table 4-2 was a difficult and "fuzzy" task. In particular, the distinction between attributes and benefits was somewhat difficult to discern. A response was coded on the basis of whether the remark was a relatively physical property of a brand or product (an attribute) or a state desired by the individual (a motive or benefit). For instance, "caffeine" and "alcohol" were considered attributes of drinks; "stay awake" and "good buzz" were considered benefits of

Table 4-2: Associates Identified as Potential Cues

Situations	Benefits	Attributes	Products
Situational Cues			
Sitting down Sleeping Studying Listening to the radio	Sore muscles/pain Tired/sleep/rest Relaxing Eat Shower Wake up Energy Feel good about myself/satisfaction Nourishment	Vitamins Protein Starch	Glass of water Food Beef/chicken Rice Fruit Amino 1000s (supplement)
Situationally Activated Cues			
Watch TV Late night studying Trips Late at night Morning	Snack meal Not too filling Habit/what I always do No preparation/ minimal effort Reward/treat Something healthy Something "bad" (unhealthy)/nothing to lose Can eat a lot Boost/energy Anxious/stress Replace fluids/salts Avoid gaining weight/defeats the purpose Wake up Like the taste	Light/not heavy Calcium Caffeine Low calorie Snack-pack size Caffeine-free	Chips Ham sandwich Little Debbie cakes Lays Cheese/cheddar Bordens Chocolate/KitKats Yoghurt Fruit Coke Water Salad Sandwich/toast Grilled chicken Tuna Crackers Peanut butter Broccoli/carrots French fries (not greasy!) Iced tea Juice Health shakes Ice cream

drinks. Some associates identified were not so clearly distinguished: "bite-size" was considered an attribute and "easy to eat" was considered a benefit. Context within the questionnaire suggested the appropriate coding of some associates generated by subjects. For instance, "convenience" in the case of snacks generally referred to their being available in the home (benefit), but "convenience" in the case of restaurants often referred to distance to the restaurant (attribute).

It has been noted that even though the situation associates were each used to focus on cuing of one particular product-type, it was apparent from the situation associates (and the situationally activated cues) generated that many appeared likely to serve as a cue to products from different product-types. For instance, the motive of gaining energy (mentioned in response to the situational cues, after a workout, studying, breakfast and in class) was identified as an associate likely to cue both snacks and drinks. Motives of dealing with "the munchies" (arising in response to weekend party, late night, road trip, watching TV and studying) was a cue to both snacks and restaurants.

The main objective of this qualitative pretest was to identify associates of brands that were likely to serve to cue brand retrieval. In a judging procedure to be described in the following section, lists of potential cues were prepared, and a small set selected for the study of brand accessibility in response to cues. The success of the qualitative pretest in identifying cues to brand evocation cannot be determined until the influence of the cues on brand evocation and brand verification is examined. These measures, and the results of the tests of the hypotheses are reported in the following.

Brand Evocation

Focusing on three product-types selected through the pretests, and utilizing a small selection of the cues found in the qualitative pretest, the brand evocation study examined the hypotheses proposing that evoked sets vary as a function of the cues that are provided at retrieval.

Method

The brand evocation study consisted of a recall task in which subjects were presented with three situations as cues, one for each of three product-types, and were asked to list whatever brands came to mind. A total of five cues for each product-type were examined, two situations and three benefits. It was anticipated that stronger cue to brand associations would be reflected by higher probability of recall. That is, it was expected that different (situation or benefit) cues would lead to brands being recalled with differing levels of probability.

Design and subjects. There were three product-types examined: drinks, snacks and restaurants. Within each product-type, of four possible cue-types, only two were examined: benefit cues and situation cues. Situation cues were examined to provide a partial replication of the study by Ratneshwar and Shocker (1991) showing that brand retrieval is affected by the provision of a situation as a cue. However, two situations different from those examined by Ratneshwar and Shocker (1991) are investigated. Furthermore, a total of three product-types are examined; Ratneshwar and Shocker examined evocation of snacks only. Benefit cues were also selected for examination as they are conceptually closer to motives than situations. A motive can be considered as a benefit (or attribute) sought and might be stable across a number of situations.

The study had a 3 x 5 mixed design with subjects being asked to list brands coming to mind for one of five cues for each of the three product-types (drinks, snacks and restaurants). The five cues, nested within product-type, were three benefit cues and two situation cues identified in the qualitative pretest (see Table 4-3). The cues from within each product-type that were included in the recall questionnaire to be shown to subjects were selected at random except that benefit cues and situation cues for different product-types were not included in the one questionnaire. That is, those seeing a situation cue for the first product-type saw only situation cues for the subsequent product-types; those seeing a benefit cue for the first product-type only

Table 4-3: Cues Used in Brand Recall Task

	Benefit Cues			Situation Cues	
Drinks:	Relaxing	Thirst quenching	Socializing	Breakfast	Party
Snacks:	Filling	Limited time	Nutritious	Watching TV	Mid-afternoon
Restaurants:	Different	Healthy	Romantic	Sunday lunch	With family

saw benefit cues. A sample of 116 subjects was tested by administering the recall measure to students in four Consumer Behavior classes.

The sample used in this evocation study was drawn from a slightly different population compared to the one from which were drawn the samples for the two pretests and the main study of this dissertation. This was done due to a need to conserve the resources of the subject pool. As the task took only five minutes to complete, subjects from upper division marketing classes were recruited. It is assumed that they were virtually identical to students in the subjects pool; completing an upper level course implies that they completed the fundamentals course which comprises the marketing subject pool.

Manipulations and stimulus materials. The cues examined were selected from the list of cues generated in qualitative pretest. The list of cues generated was initially reduced to include only the most frequently mentioned cues and those cues that were considered most likely to be effective cues for brand retrieval. This reduced list was distributed to three persons aware of the purposes of this study. The task was for the three judges to identify the associates which appeared likely to be most effective cues in influencing brand retrieval; the cues selected for use in brand evocation and brand verification studies reported in this chapter were those selected by all three judges or selected on the basis of discussions between the judges.

It has been noted that only two situation cues were selected for testing in the recall task. In addition, substantially smaller samples were asked to provide recall to these situation cues (11 to 13 subjects provided recall for each of the situation cues versus 29 or more for each of the benefit cues). Part of the reason for smaller samples looking at situations was a constraint on the number of subjects that could be run. Furthermore, as noted earlier, situation cues were included only to replicate Ratneshwar and Shocker's (1991) findings and to extend its generality to other situations and other product-types. Once it was apparent that the results were replicated, greater attention was given to the benefit cues as these were preferred for the manipulation of brand awareness to be undertaken in the study to be described in the following chapter. They were preferred because it is presumed that benefits operating as cues have broader relevance than situations; that is, a benefit may operate in a variety of situations.

Dependent measures. Brand accessibility was measured by the frequency with which the brand was recalled in response to a cue. The brand evocation measure was a questionnaire requiring subjects to generate three evoked sets (see Appendix A). Each of the three pages following the cover page gave a cue word (or words), and the name of the product-type to be evoked. Subjects generated an evoked set for one of the five cues associated with each of the three product-types. The order of the product-types in each questionnaire was randomized. Subjects were assigned to cues on a random basis with the constraint that the cues for each product-type were of the same type. That is, if one of the cues for one of the product-types was a situation cue, then the other two cues selected for the other two product-types were also situation cues. It is should be noted that in the interests of measuring evocation as it might occur in the purchase situation, and evocation free of any initial evaluative processes, subjects were asked not to list those brands that they would consider buying or using, but rather, to list those brands that came to mind.

Experimental procedure. The brand evocation measure was administered to four Consumer Behavior classes, each class consisting of 30 to 35 students. The questionnaires, each representing random orders of product-types and randomly selected cue within product-type, were distributed to the class. The instructions on the covering page were read out aloud to the subjects who then had to work through a practice trial. Then subjects generated three evoked sets, one for each of the product-types. After generating an evoked set for each cue (which will be called "direct recall"), subjects were instructed to return to each cue (page) and to list up to three brands for each place where they mentioned a product or product category rather than a brand ("indirect recall").

The entire task was coordinated by the researcher, and all subjects completed each page of the questionnaire at the same time. Subjects were allowed 20 seconds to generate each evoked set, and were then required to move on to generate the next. Subjects were provided with no time limit for completion of the indirect recall task. After administering the questionnaire, the purpose was discussed and the subjects were dismissed.

Results and Discussion

All brands and products recalled were coded and entered as data into the analysis. As was expected, there was a mixture of products and brands in subjects' recall, and this has been preserved in the reporting of the results. That is, evocation at the "basic level" (Rosch 1975) forms the key level at which analysis was conducted. The frequency with which each brand was directly recalled served as the key dependent variable. The results are reported as the first five most frequently recalled products for each cue within each product-type (see Table 4-4). Note that whenever the fifth most frequently recalled product shared the same frequency with any other product or brand, all products and brands with that frequency of recall are reported. The average

Table 4-4: Evoked Sets by Cue

a) Recall of Drinks by Cue

Relaxing (n = 32)		Thirst Quenching (n = 29)		Socializing (n = 31)		Breakfast (n = 12)		Party (n = 12)	
Beer	41%	Gatorade	72%	Beer	77%	Milk	83%	Beer	67%
Water	28%	Water	72%	Wine	35%	Orange juice	75%	Coke	42%
Wine	25%	Coke	34%	Water	19%	Coffee	50%	Wine	25%
Orange juice	22%	Orange juice	28%	Coke	19%	Water	25%	Vodka	25%
Coke	16%	Iced tea	21%	Vodka	19%	Coke	25%	Rum & Coke	25%
Lemonade	16%					Tea	25%		
Iced tea	16%								
Tea	16%								

b) Recall of Snacks by Cue

Filling (n = 32)		Limited Time (n = 31)		Nutritious (n = 29)		Watching TV (n = 13)		Mid-Afternoon (n = 12)	
Chips	38%	Chips	45%	Fruit	35%	Popcorn	69%	Chips	36%
Snickers	25%	Candy	32%	Apple	29%	Chips	62%	Fruit	36%
Pretzels	22%	Crackers	32%	Granola bar	29%	Doritos	31%	Cookies	36%
Candy	19%	Pretzels	29%	Banana	23%	Pretzels	23%	Apple	27%
Donuts	16%	Cookies	29%	Orange	19%	Coke	23%	Yogurt	27%
Sandwich	16%								

Table 4-4--continued

c) Recall of Restaurants by Cue

Different (n = 30)	Healthy (n = 30)	Romantic (n = 31)	Sunday Lunch (n = 12)	With Family[a] (n = 12)
Melting Pot 23%	Chaucer's 43%	Melting Pot 31%	Skeeters 42%	Bennigan's 42%
Olive Garden 20%	The Mill 23%	Steak & Ale 21%	Shoney's 33%	Chili's 33%
Chili's 13%	Olive Garden 13%	Sovereign 21%	Olive Garden 25%	Olive Garden 33%
Japanese 13%	Subway 13%	Olive Garden 17%	Bennigan's 25%	Steak & Ale 25%
Chaucer's 10%	Bennigan's 10%	Italian 17%	Chili's 25%	
McDonald's 10%	Ivey's 10%		McDonald's 25%	
Burger King 10%	Rax 10%		Denny's 25%	
Taco Bell 10%			IHOP 25%	
Chi-Chi's 10%				
Leonardo's 10%				

[a] Only brands mentioned by three respondents or more were considered in the rankings; all restaurants mentioned less frequently than Steak & Ale were mentioned by only one or two people.

number or brands and/or products in the evoked sets generated in response to each cue are given in Table 4-5.

A chi-squared analysis of the frequency of recall of the five most frequently recalled brands for each of the five cues was conducted. To calculate the chi-squared statistic, it was necessary to include the frequency of recall of all brands for all cues if the brand was ranked

Table 4-5: Average Number of Products and Brands Included in Evoked Sets

Drinks:

Relaxing (n = 32)	Thirst Quenching (n = 29)	Socializing (n = 31)	Breakfast (n = 12)	Party (n = 12)
3.9	4.2	4.4	4.6	5.1

Snacks:

Filling (n = 32)	Limited Time (n = 31)	Nutritious (n = 29)	Watching TV (n = 13)	Mid-Afternoon (n = 11)
3.6	4.2	4.0	4.2	4.3

Restaurants:

Different (n = 32)	Healthy (n = 29)	Romantic (n = 31)	Sunday Lunch (n = 12)	With Family (n = 12)
3.2	2.2	2.9	3.9	4.2

within the top five for any of the cues. The results of the overall analysis and a comparison of the evoked sets generated for each cue relative to each other cue within each product-type are presented in Table 4-6. The analysis revealed that there was a significant difference in recall by cue for all three product-types.

In addition to the overall analysis, a comparison of each cue with each other cue within each product-type revealed that there were significant differences in recall between every pair of cues except three. The recall of drinks in response to socializing was not signficantly different from recall cued by party. The recall of snacks in response to filling and limited time were significantly different from each other, but in both cases, was not significantly different from recall to the cue, mid-afternoon.

Table 4-6: Analysis of Frequency of Recall of Products

a) Comparison of Evoked Sets of Drinks by Cue

Overall Analysis: $\chi^2_{(48)}{}^{a} = 222.4$, $p < 0.001$

	Socializing	Thirst Quenching	Breakfast	Party
Relaxing	$x^2_{(12)} = 36.1$ $p = 0.000$	$\chi^2_{(11)} = 46.5$ $p = 0.000$	$\chi^2_{(12)} = 39.7$ $p = 0.000$	$\chi^2_{(12)} = 36.0$ $p = 0.000$
Socializing		$\chi^2_{(12)} = 95.1$ $p = 0.000$	$\chi^2_{(11)} = 69.8$ $p = 0.000$	$\chi^2_{(10)} = 8.7$ $p = 0.565$
Thirst Quenching			$\chi^2_{(11)} = 70.7$ $p = 0.000$	$\chi^2_{(11)} = 59.1$ $p = 0.000$
Breakfast				$\chi^2_{(9)} = 50.0$ $p = 0.000$

b) Comparison of Evoked Sets of Snacks by Cue

Overall Analysis: $\chi^2_{(64)} = 152.6$, $p < 0.001$

	Limited Time	Nutritious	Watching TV	Mid-Afternoon
Filling	$\chi^2_{(16)} = 26.5$ $p = 0.047$	$\chi^2_{(16)} = 58.0$ $p = 0.000$	$\chi^2_{(15)} = 35.1$ $p = 0.002$	$\chi^2_{(15)} = 12.8$ $p = 0.615$
Limited Time		$\chi^2_{(16)} = 57.9$ $p = 0.000$	$\chi^2_{(14)} = 30.3$ $p = 0.007$	$\chi^2_{(16)} = 15.1$ $p = 0.515$
Nutritious			$\chi^2_{(15)} = 54.0$ $p = 0.000$	$\chi^2_{(16)} = 26.0$ $p = 0.054$
Watching TV				$\chi^2_{(15)} = 30.5$ $p = 0.010$

[a] The likelihood ratio chi-squared test is reported as it is more appropriate (Hays 1963) when contingency tables contain some cells with low frequencies.

Table 4-6--continued

c) Comparison of Evoked Sets of Restaurants by Cue

Overall Comparison: $\chi^2_{(84)}{}^{a} = 218.7$, $p < 0.001$

	Romantic	Different	Sunday Lunch	With Family
Healthy	$\chi^2_{(16)} = 73.1$ $p = 0.000$	$\chi^2_{(19)} = 58.2$ $p = 0.000$	$\chi^2_{(16)} = 51.8$ $p = 0.000$	$\chi^2_{(13)} = 44.7$ $p = 0.000$
Romantic		$\chi^2_{(18)} = 40.7$ $p = 0.002$	$\chi^2_{(17)} = 60.3$ $p = 0.000$	$\chi^2_{(12)} = 33.7$ $p = 0.001$
Different			$\chi^2_{(18)} = 34.2$ $p = 0.012$	$\chi^2_{(17)} = 30.2$ $p = 0.025$
Sunday Lunch				$\chi^2_{(14)} = 28.0$ $p = 0.014$

[a] The likelihood ratio chi-squared test is reported as it is more appropriate (Hays 1963) when contingency tables contain some cells with low frequencies.

The lack of differences in recall in the three cases described are perhaps not surprising. Given the student population from which the sample was drawn, the benefit of socializing and the situation of party are likely to be very closely related. Indeed, it implies that at a party, a major benefit sought is socializing. Perhaps the result seen in snacks can be explained in a similar manner. The situation of wanting a snack in the middle of the afternoon is perhaps associated with limited time and/or a desire for something filling, and hence, recall of brands to the cue, mid-afternoon, is not significantly different from the recall cued with filling or limited time even the two latter cues lead to significantly different recall.

Clearly, the recall data support the findings of Ratneshwar and Shocker (1991) and extends their finding by showing that recall varies by situation cue across a range of product-types. This finding supports the first hypothesis that brand evocation varies by the cuing situation. In addition, the data provide clear support for the second hypothesis that evoked sets vary by the cuing benefit. Interestingly, the only non-significant differences in recall appeared in the comparison of situation cues with benefit cues. One interpretation of these cases is that the situation cues are operating indirectly via the benefit cues; evocation would not be expected to be significantly different between benefit cues and situation cues which evoke those same benefits. That is, the situation operates as an indirect cue and the benefit operates as a more direct cue.

The next section examines the brand verification task, the results being compared with the probability of recall data collected here in order to examine the relationship between the two measures which is hypothesized to be positive.

Brand Verification

The brand verification study was conducted using a response time measure similar to those used by Fazio and colleagues in examining attitude and brand accessibilities (e.g., Fazio 1990). Using cues selected from those examined in the brand evocation study, the intention in this study was to test the third hypothesis that the two measures, brand evocation and brand verification, are positively related.

Method

Subjects completed a computer driven task in which they were exposed to a series of letter strings. Their task was to state whether each letter string represented a real word or a nonsense word[12]. Subjects were instructed to treat brands as representing real words. The letter strings were presented as sequential pairs with the first letter string or "word" being the cue, the second being the target, that is, the brand. Subjects were not told that the words were being presented as pairs nor were they told that every second word would be a brand. Subjects were required to verify whether each and every word (i.e., the cue and the brand) were real or nonsense.

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[12] This task is virtually identical to one used by Schvaneveldt and Meyer (1973) in which they showed that the time taken to correctly verify a word was faster when that word followed a related word. For instance, "doctor" would be verified faster when after "nurse" than after

The verification task was designed after the evocation task was completed. This was useful as the verification task explicitly linked certain brands with the cues that were used in both the recall and the verification tasks. The test of the relationship between the recall and verification measures was made more efficient by selecting brands so that a range of variation in recall was represented.

Design and subjects. In the verification task, the key measure was the time taken to verify that the brand was a real word. This measure of the accessibility of the brand with respect to given cues was to be aggregated across subjects and compared with the frequency of evocation. In contrast to the evocation task, there were six product-types examined in the verification task. Three of the product-types matched those examined in the evocation task (drinks, snacks and restaurants); three other product-types were included to provide filler trials (breath fresheners, newspapers/magazines and stores).

The verification task was a 2 x 6 x 2 x 4 x 4 mixed design, the five factors being two versions of the task, six product-types, two cue-types, and four brands combined with four cues nested within product-type and cue-type. A total of 38 subjects completed one of the two versions of the verification task which varied in terms of the presentation of the blocks of trials. In one version, the pairs or trials were presented at random within blocks, but all the brands appearing in each block represented one product-type. In the second version, blocks did not

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"bread." The major difference is that, in the current study, the task included brands.

contain only brands from one product-type, but a random selection of all the brands used in the study. The trials within each block were presented at random. All the remaining factors were manipulated within subjects.

All subjects saw 32 trials (cue-brand pairs) for each of six product-types for a total of 192 trials. Of the 32 trials within each product-type, there were two groups of four cues and four brands which were fully crossed giving two groups of sixteen trials. The two groups of cues and brands have been labeled by the dominant cue-type in the group: a benefit cue or a situation cue (see Table 4-7). The specific composition of these groups of cues is discussed later. The sample of subjects for the verification task was a convenience sample. Subjects were drawn from a number of groups; most (76%) were students in Marketing or Business and were recruited directly from classes above the introductory Marketing level, or recruited by persons in those classes.

The sample was drawn from a place other than the marketing subject pool due to a need to conserve the resources of the subject pool. The verification task was an extremely short task (about ten minutes) and so the search for subjects had to extend beyond those in the marketing subject pool. The subjects that were selected were likely to be very similar to those in the marketing subject pool. Some subjects were from the marketing subject pool and were recruited immediately after having completed a study for one of two other researchers. The remainder were students from other marketing courses or friends of those students; the majority of the sample (76%) were undergraduate students in the business school implying that they must have completed the required fundamentals course in marketing, and therefore, were once in the marketing subject pool.

Manipulations and stimulus materials. In the verification task, the order in which the pairs were presented was manipulated to see if there was any difference between random

Table 4-7: Cues Used in Brand Verification Task

	Benefit Cues[a]	Brands[a]	Situation Cues[b]	Brands[b]
Drinks:	Thirst quenching Relaxing Soda Palsena	Gatorade Coke Sprite Anlort	Breakfast Party Fruit juice Cort flaff	Tropicana Budweiser Carnation Dralbount
Snacks:	Filling Quick Toaster pastries Altrander	Snickers Doritos Pop-Tarts Bauntess	Watching TV Mid-afternoon Potato chips Crote lonid	Popcorn Ruffles Milky Way Hafters
Restaurants:	Different Healthy Restaurant bar Grontlen	Chaucers Melting Pot Cafe Gardens Saufrattia	Sunday lunch With family Breakfast house Harle trein	Skeeters Bennigans Brown Derby Gerraldon
Breath Fresheners:	Fresh Friendly Mouthwash Jortlon	Listerine Dentyne Colgate Blainton	Meeting After meal Toothpaste Ilantrok	Tic-Tac Crest Wrigley Plinoc
Newspapers/ Magazines:	World events Easy reading Daily paper Poars flond	Time Alligator Playboy Nurat	Afternoon Morning Newspaper Klantran	Newsweek Gainesville Sun Business Week Mantroil lont
Stores:	Nearby Cheap Convenience store Vorlon	Jiffy K-Mart Sears Dosna	Weekly shop Weekend Grocery store Yarbol knel	Publix Burdines Home Depot Wrostel

[a] Within each product-type, each of the four benefit cues was presented in association with each of the four associated brands.

[b] Within each product-type, each situation cue was presented in association with a set of four associated brands different from those associated with the benefit cue.

presentation of the cue-brand pairs versus random presentation within product-type blocks.

In both the evocation and the verification task, accessibility of brands within three target product-types was measured: drinks, snacks and restaurants. In the verification task, an additional three product-categories were examined. This was done to provide filler trials to seperate the trials involving the target product-types.

As in the evocation study, two cue-types were examined; however, in the verification task, only two cues within each cue-type were examined (whereas the evocation task examined three benefits and two situations). The selection of the two cues (out of three) to be tested was driven largely by considerations for the main study to be reported in Chapter 5. In brief, benefit cues which led to relatively flat distributions in terms of probability of recall (i.e., not dominated by one or two brands) *and* a pair of cues that both led to infrequent recall of a specific brand (not a product) were selected. These criteria were used because in the main study, an infrequently mentioned brand was to be associated with two benefit cues. The flat distribution was preferred so that competitive interference inhibiting retrieval of the brand following association of the target brand with the cue would be minimized.

The overall intention in the design of the cue-brand pairs was to represent a range of brand accessibilities. Accordingly, the brands were selected to represent a range of variation in recall frequencies. The response times collected for this set of cue-brand pairs (averaged across subjects) were then compared with the recall frequencies.

The actual process generating the cue-brand pairs was somewhat complex and is discussed in the following (refer to Table 4-7). The two groups of cues within each product-type are labeled as benefit cues or situation cues. However, these groups contained four cues, two were as designated by the label, but one of the other two was a product-category label and the other was a nonsense word. More specifically, the basis of each group of cues was two benefit or two situation cues from those used in the evocation task. Then, two brands (not products) were selected, the first highly likely to be recalled in relation to the first cue, the second highly likely to be recalled in response to the second cue[13]. Then a third brand was chosen which was less likely to be recalled in response to one or both of the first two cues. The third cue was always the product-category label for one of the three brands selected. Finally, one nonsense cue and one nonsense brand was included in each group of cues and brands so that one quarter of the words seen by each subject would require a "No" response.

It is important to note again that the selection of the brands to present with the selected cues was designed to represent the range of variation in recall frequencies. The other feature driving the selection of brands was the need to have a brand (the third brand) which could be associated with either of the two cues in each product-type for use in the main study.

Dependent Measures. Brand verification was measured in a response time task that was programmed on MEL (Micro-Experimental Lab), a package for programming and running psychological studies such as response times. Subjects were exposed to a series of 384 letter strings; each word appeared for 750 milliseconds and there was a gap of 500 milliseconds between each word presented. The subject's task was simply to indicate whether each letter string appearing on the screen represented a real word (or words) or nonsense. Subjects were instructed to treat brands recognized as real words.

The letter strings appeared as a sequence of paired letter strings; each pair consisted of the cue word followed by a brand. The first word of each pair appeared just a little above the midpoint of the screen, the second one appeared just a little below the midpoint of the screen. Subjects were not told that the words were paired, and were not told that every second word would be a brand. One quarter of the cues and one quarter of the brand names were nonsense words. This was to ensure that subjects attended to the task and had to concentrate in order to respond correctly. All pairs for which the subject made an error in verifying either the cue word or the brand name were rerun at the end of each block of trials. There were a total of 8 blocks of 24 trials or pairs of letter strings in each block. Subjects were encouraged in the initial instructions, and by a message appearing on their screen between blocks, to rest before proceeding to the next block.

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[13] While the evoked sets generated in the recall task contained brands and products, the wish to focus on brand retrieval led to the selection only of brands for associating with the cues. The selection of brands was basis of "direct" recall and "indirect" recall. The one exception to this use of brands was the selection of popcorn as the snack chosen to be associated with the situation cues (see Table 4-7).

Experimental Procedure. The subjects took a seat at a computer and the verification program was initiated by the researcher. Subjects were assigned at random to either the random ordering of the pairs or the condition where the pairs were blocked by product-type. Once the task had been explained, subjects were left to complete the task. Most completed the task in less than ten minutes. Subjects were debriefed and dismissed.

Results and Discussion

Hypothesis 3 predicts that brand evocation and brand verification are positively related as they are both considered to measure brand accessibility. Brand verification was compared with both the direct and indirect measures of brand evocation. Direct recall refers to when the brand was recalled directly in response to the cue; indirect recall refers to when the brand was recalled only after subjects were asked to go back through the brands and products that they directly recalled, and to list up to three brands for each product category mentioned, or for each brand mentioned that was used as a product category label. Brand verification was correlated with the direct measure, and with a combination of the direct and the indirect measure.

In addition to the direct and indirect measures of recall of the brand to the cues provided, a proxy measure for the recall of all brands in response to those category cues included in the verification task was calculated on the basis of indirect recall of brands to the product category in the brand evocation task. For instance, taking all respondents who mentioned the category of soda (or used Coke as a label meaning soda), the percentage of those mentioning Gatorade, Coke and Sprite was taken as the frequency of recall of that brands to the product category cue. As this was an imperfect measure of recall to the product category cue, the correlations are reported with and without these proxy measures of recall to category included.

The frequency of recall of a brand in response to a cue was compared with the average response time for verification of that cue-brand pair. The analyses reported all used the reciprocals of the response time data in accord with the procedure recommended by Fazio (1990) for normalizing response time measures. However, all means are reported in terms of the untransformed response times.

The mean response times and the corresponding frequencies of recall are presented in Table 4-8. As is apparent from the correlations presented in Table 4-9, the results provide strong support for the hypothesis that brand evocation and brand verification are related measures. A correlation of 0.48 or higher was obtained for all the correlations ($p \leq 0.001$) with the correlations being slightly higher when the proxy measures of brand recall to the product category are excluded. It is noteworthy that despite minor differences, the correlations are quite robust and do not depend greatly on whether the correlations are calculated on the basis of direct recall or direct + indirect recall, or inclusion or exclusion of the proxy measures of product category cuing brand evocation[14].

It appears clear that brand recall and brand verification measure are closely related measures of brand accessibility. The inclusion of indirect recall has virtually no effect on the correlations. This is perhaps surprising given that one might expect that a measure that accounts

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[14] Calculations based on the untransformed response times provide similar, but slightly lower correlations ($r = 0.45$ and higher).

Table 4-8: Comparison of Response Times and Recall Frequencies for Cue-Brand Pairs

Cue Type-Product Type	Brands					
Cues:	RT (msec)	Recall (%)	RT (msec)	Recall (%)	RT (msec)	Recall (%)
Benefit-Drink	Gatorade		Coke		Sprite	
Thirst Quenching	464	72.4	487	34.0[a]	482	13.8[a]
Relaxing	524	9.4	454	16.0[a]	485	6.2[a]
Soda	481	0.0	459	95.7	467	30.4
Situation-Drink	Tropicana		Budweiser		Carnation	
Breakfast	505	0.0[a]	550	8.3[a]	604	8.3
Party	500	0.0	538	8.3[a]	573	0.0
Fruit Juice	472	31.4	524	0.0	577	0.0
Benefit-Snack	Snickers		Doritos		Pop-Tarts	
Filling	485	25.0[a]	546	9.4[a]	535	3.1
Quick	505	6.5[a]	537	9.7[a]	528	3.2
Toaster Pastries[b]	507	-	511	-	520	-
Situation-Snack	Popcorn		Ruffles		Milky Way	
Watching TV	481	69.2	583	7.7[a]	506	0.0
Mid-Afternoon	483	18.2	580	0.0[a]	499	0.0
Potato Chips	483	0.0	553	32.5	509	0.0
Benefit-Restaurant	Chaucers		Melting Pot		Cafe Gardens	
Healthy	527	41.9	579	0.0	567	3.2
Different	612	10.0	486	23.3	560	0.0
Restaurant Bar[b]	516	-	554	-	533	-
Situation-Restaurant	Skeeters		Bennigans		Brown Derby	
Sunday Lunch	496	41.7	539	25.0	523	0.0
With Family	526	0.0	512	41.7	548	0.0
Breakfast House[b]	467	-	545	-	567	-

[a] The figure given is for direct recall of the brand. The superscript indicates that indirect recall was greater. Indirect recall is where the subject recalled a product category and on further prompting for brands, recalled the brand.

[b] These product categories were not recalled by any subjects and therefore, no proxy measure of brand recall in response to these product categories is available.

Table 4-9: Correlation of Response Times and Recall Frequencies for Cue-Brand Pairs

	Recall to Category Cue[a] Included	Recall to Category Cue Excluded
Direct Recall	$r = 0.49$ $(p < 0.001)$	$r = 0.53$ $(p < 0.001)$
Direct Recall + Indirect Recall	$r = 0.48$ $(p = 0.001)$	$r = 0.52$ $(p < 0.001)$

for indirect as well as direct recall would be more closely related to the response time measure which automatically accounts for both types of links.

With respect to the inclusion or exclusion of the product category recall measures, it is clear that this measure was less than perfect. A better measure would have been to conduct a separate test of the recall of brands in response to the product category cue. Perhaps the most notable point about the results was how similar the results whether or not the product category cue was included.

While the relationship between the two measures was positive, one might ask why it was not higher. At least part of the reason might be that the evocation measure tends not to make any distinction between a brand not recalled, but which is fairly accessible versus a brand which is not recalled and is fairly inaccessible. That is, the brand evocation measure would suggest that both are "inaccessible."

Another problem is that "recall of brands" fails to capture to the complexity of cue-brand relationships. For instance, given the remarks about direct and indirect cuing made above, it appears that there is a need for a measure of evocation that is more than just recall of brands from a category. For instance, it is possible that thinking of popcorn tends to evoke certain other categories such as chips and/or pretzels, and therefore, indirectly cues major brands in the other categories. For instance, the category of popcorn could feasibly be responsible for evocation of brands in other categories which would not be captured by measures of brand recall to the product category cue, popcorn. Nevertheless, comparison of the direct evocation with a measure including indirect evocation appeared to give little advantage to the latter.

To try and eliminate some of this initial screening by subjects (e.g., to report only brands appropriate to the cue--such as excluding brands coming to mind that do not belong to a given product category), the evocation measure used in the second study was based on brands that came to mind rather than brands that would be considered for a given situation or to provide a particular benefit. That is, a situation or benefit might cue brands which seem inappropriate, but if cued should be considered nevertheless as part of the evoked set. Second, a measure of both direct and indirect recall was taken. However, some more examination of the relationship between the verification and evocation might be justified, with particular attention being devoted to the development of a better measure of brand evocation.

Overall, the comparison of the verification results with the evocation results suggest that the brand verification measure provides a useful measure of brand accessibility. Accordingly, it will be used in the main study to be discussed in the final chapter. The final section of this chapter provides a summary and general discussion of the results of the studies reported in this chapter.

Summary

The two pretests were designed to identify some product-types, situations and other types of associates that were likely to be operating as cues in consumer choice situations. The set of possible product-types was reduced to drinks, snacks and restaurants. And a variety of situations, benefits, attributes and product categories and brands were identified as brand associates with the potential to serve as cues. From this set, a number of situations and benefits were selected for examining in the brand accessibility studies. In particular, it remained to be seen whether or not the subjects had identified cues pertinent to the evocation stage of the choice process rather than simply brand associates which served only as determinant attributes in the evaluation phase of the choice process.

The first brand accessibility study examining brand evocation tested the first two hypotheses suggesting that brand evocation would vary as a function of the cues provided; specifically, it was anticipated that brand evocation would vary as a function of the situation cues and as a function of benefit cues. It was clearly demonstrated that provision of a cue strongly influenced the nature of the brands recalled. It is worth remembering that subjects were not asked to generate appropriate brands and products but were simply asked to list whatever products within a given product-type came to mind. That is, despite the constraint (and indeed, the cue) given by the product-type, thinking about a situational or benefit cue led to substantial differences in the evoked sets generated.

An interesting implication of this finding for marketers is the need to broaden our notions of the process of brand evocation. Measures of brand recall in response to a product category cue appear inadequate in capturing the variation possible in the brand evocation process from choice occasion to choice occasion. That evaluations vary by situation is well established (e.g. Miller and Ginter (1979); the results of the second study reported in this chapter indicate that evocation varies by either the situation or the benefit which serves as a cue. A further implication is that memory for a brand is likely to be stable to the extent that the cues (situations or benefits for example) are the same. Consequently, to the extent that a brand is strongly evoked in a given situation or in response to a particular benefit, it can be said to have strong share (in terms of evocation) of that situation or benefit segment. To the extent that brand awareness is a major underlying factor in choice, it can be anticipated that a brand strongly evoked in a particular situation or when a particular benefit is serving as a cue, it can then be argued that the brand has a greater probability of choice in those segments, and to that extent, has some equity in those segments.

The brand verification study reported in this chapter examined the relationship between two measures that are presumed to measure brand accessibility. The relationship of brand evocation, as measured in the second study, with the response time measure, that is brand verification, was found to be fairly strongly positive. Nevertheless, the correlation between the two measures could be hoped to be higher. It was suggested that in order for this to be achieved, it is necessary to give further consideration to the development of brand evocation measures that capture more completely the various cuing influences involved. For instance, the typical measure of brand recall in response to a product category ignores completely the notion of a product category indirectly (or perhaps directly) cuing brands in other product categories.

Given the determination of brand accessibility as a function of the cues presented at the time of retrieval, it seems likely that brand accessibility should be manipulable to the extent that the link between a cue and a brand is strengthened. In the following chapter, the direct manipulation of the associative strength from a brand to the cue is investigated and reported. In addition, the influence of this manipulation on awareness as well as a brand choice measure is reported.

CHAPTER 5
MANIPULATING BRAND RETRIEVAL

Brand accessibility is a particularly important construct in understanding consumer behavior. If the brand is inaccessible, accessibility of other information about the brand (including attitudes and attributes) is largely irrelevant. Despite the critical importance of brand accessibility, there appears to have been disproportionately less attention paid to the issue of brand accessibility relative to attitude and attribute (or brand information) accessibility.

Coupled with the lack of attention to brand accessibility is the tendency for most consumer research to focus on memory as a function of encoding operations. Hutchinson and Moore (1984, p. 650) note that much memory-related research in the area of carry-over effects in advertising has "focused primarily on events that occur during the encoding or learning of information" (p. 650). Accordingly, researchers examining memory effects in the area of brand awareness have focused on issues like "effective frequency" (Krugman 1972, Rossiter and Percy 1987), repetition (Sawyer and Ward 1979) and brand familiarity (Baker et al. 1986). Some have also considered memory for the brand as a function of the levels of processing (Meyers-Levy 1989) although typically this approach to memory has been considered in the area of memory for information (e.g., Petty and Cacioppo 1981).

More recently, researchers have come to consider and recognize the importance of retrieval operations. Baker et al. (1986) suggest that brand accessibility, specifically recall, is a function of the types of retrieval cues that are present in a retrieval situation. Ratneshwar and Shocker (1991) have shown that brand retrieval is a function of the situational cues provided at the time of recall. In a similar manner, the present research has demonstrated that brand accessibility is a function of both situational and more general benefit cues provided at the time of recall. Nedungadi (1990) showed that the provision of a prime at the time of retrieval leads to biasing of retrieval towards some brands.

The importance of the interaction of encoding and retrieval in memory research in psychology is established by Tulving and Thomson's (1973) principle of encoding specificity which states that accessibility, and so retrieval, of some to-be-remembered item is facilitated to the extent that there is an overlap in the conditions at encoding and at retrieval. Tulving and Thomson (1973) discussed this overlap in terms of physical cues, but subsequent research has shown that the principle generalizes so that memory is facilitated when there is an overlap between encoding and interaction in terms of "state" or mood (e.g. Eich 1989) and cognitive processing styles (e.g., Blaxton 1989).

The principle of encoding specificity appears to have some very clear application to our understanding of the brand awareness and brings together the two streams of research which have considered, separately, the role of the encoding operations and the retrieval operations. Some marketing theorists have considered the role of encoding specificity in marketing; however, they have examined the facilitation of memory for brand associates, not brands, provided by matching conditions at encoding and retrieval (Baker and Lutz 1988, Keller 1990). The suggestion here is that evocation of brands can be systematically influenced to the extent that cues in the encoding situation match those present at retrieval:

> H4: If a cue present at retrieval is present in the encoding situation, brand accessibility increases, but not otherwise.

Given that the encoding specificity principle predicts an interaction of encoding and retrieval, it would be useful to demonstrate that standard encoding effects are moderated by this principle. Perhaps the most frequently considered encoding manipulation affecting brand accessibility is that of repetition (Krugman 1972, Rossiter and Percy 1987; Sawyer and Ward 1979). This literature, and most practitioners, consider that the brand is more likely to be remembered as repetition increases.

The relationship between repetition and accessibility has also been established in the literature on attribute and attitude accessibility (e.g., Fazio et al. 1982). In marketing, the role of repetition of advertisements in influencing attitude accessibility was demonstrated by Berger and Mitchell (1989). It is is therefore proposed that repetition of ads should increase the accessibility of the brand. However, the influence of repetition of ads will affect accessibility of the brand only to the extent that there is an overlap in the conditions between encoding and retrieval. Therefore,

> H5: Repetition of an associate-brand link increases accessibility of the brand only if that associate is one that is present as a cue at retrieval.

It has been well-established that brand awareness and brand choice are closely related (Axelrod 1968, Baker et al. 1986, Haley and Case 1979). Therefore, it is anticipated that the hypotheses reported above should also apply to choice. That is, choice will be facilitated to the extent that cues are provided at retrieval which reinstate cues present at encoding, and repetition will be effective in raising the probability of choice, again to the extent that the same cues are presented at both encoding and retrieval.

> H6: As brand accessibility increases and probability of inclusion of the brand in the evoked set increases, so does the probability of choice.

However, it is not anticipated that choice will show as great an effect of the manipulations of accessibility as recall of a brand does not ensure choice. That is, if the brand is not included in the evoked set, its probability of being chosen is zero; if the brand is included in the evoked set, its probability of being chosen is presumably greater than zero but in general, less than one. As was stated in the conceptual development in Chapter 3, brand choice is a function of both brand evocation and brand evaluation. Therefore, it is predicted that brand choice will vary as function of the brand accessibility (which in turn is expected to be influenced as described in Hypotheses 4 and 5 above), but the choice of evoked brands is predicted to be a separate function of brand evaluation.

Furthermore, it is anticipated that the manipulations of accessibility will not influence choice by influencing brand evaluation. The effect of the manipulations is expected to increase the probability of inclusion of the target brand in the evoked set. In a similar manner, Nedungadi (1987, 1990) showed that a priming manipulation increased the probability of inclusion of the brand in the evoked set. However, the evaluations of the brand were unchanged, and so choice of a brand from the evoked set was contingent on the evaluation of the brand relative to other brands in the evoked set. It is anticipated that choice of the target brand will be influenced by the increase in accessibility (see H6), but that evaluation will remain unchanged and choice from the evoked set will be dependent on the evaluation of the brand relative to others in the evoked set.

Method

Subjects saw an advertisement in which a brand was presented along with one of two associates. Some subjects viewed the advertisement once, while others viewed it three times. A control group never saw any advertisement. After an approximately 45 minute period in which subjects saw and rated several images for an unrelated study, they were taken to a different laboratory in a different building. Here, they participated in an apparently unrelated study that essentially measured success of the manipulation in increasing brand accessibility. It was anticipated that likelihood of brand recall and speed of brand verification would increase only in response to those associates that were provided in the advertisement. Repetition would increase brand accessibility, but only if the cues provided in the advertisement were also provided as cues to brand recall and brand verification. To the extent that brand accessibility is increased and there were no other more preferred brands in the evoked set, choice of the brand should also increase.

Design and Subjects

The design was a 2 x 2 x 2 x 2 mixed design with the three between subjects factors being repetition (three versus one exposure), encoding cue (two different executions for each brand advertised) and retrieval cue (match versus nonmatch with cue present at encoding). The fourth within subjects factor, product-type, had two levels, snacks and restaurants, that were selected from the three product-types used in the previous studies. In the verification, there were actually four levels of retrieval cue: match, nonmatch, category-label and nonsense word. These cues will be explained in more detail in the description of the task and in the presentation of the results. Otherwise, the design was as described above for all three dependent measures (verification, recall and choice).

The stimuli (the product-types, the cues and the brands) were selected on the basis of basis of the pretests and studies reported in the previous chapter. Of the three product-types investigated in the studies reported in Chapter 4, snacks and restaurants were chosen. In the recall of both snacks and drinks, it was noted that many brands tend to be recalled indirectly (i.e., via an intervening product category cue), but not many were recalled directly. This was a problem because it was considered preferable to use ads for brands rather than product categories in the interests of realism. The product-type, snacks was chosen because a brand was found that tended to serve as both a brand and product category label (i.e., Pop-Tarts) and therefore, bypassed this problem. Restaurants was chosen as the other category as direct recall of brands was found to be the most usual form of response from virtually all subjects. Of the two cue-types investigated in the brand evocation and brand verification studies, benefit associates were chosen over situation associates on the basis that they offered more direct cuing and could serve as a cue in a range of situations. Selection of the specific cues and the brands is discussed in the next section describing the stimuli.

A sample of 160 subjects was drawn from the marketing subject pool with the restriction that none had participated in any of the previous pretests or studies. An additional 50 subjects were drawn to participate in the second stage of this study, providing a control group. Subjects were run in groups ranging in size from four to 16.

Manipulations and Stimulus Materials

The independent variables were the number of exposures to a particular advertising execution (one versus three), the cue (associate) present at encoding, and the cue present at retrieval. The product-type, which was manipulated within-subjects, was treated as a stimulus replicate. Results for each product-type are analyzed and presented separately.

The number of exposures were chosen to represent the range over which repetition effects are likely to occur. The choice of three exposures as the upper limit fits with the fairly widely held notion that minimum effective frequency is typically greater than one (Rossiter and Percy, p. 428) and often around three (Krugman 1972).

The cues to be used at encoding were selected from those used in the brand verification study. In choosing the associates to be linked with brands, a major criterion was that neither of the associates strongly evoked any particular brands. This was to minimize the competitive interference which might inhibit the recall of the target brands in response to the cue.

For each product-type, one brand was chosen as the brand to be advertised, and therefore, to serve as the target brand in the retrieval and choice tasks. One target brand for each product-type was selected using the data collected in the evocation study. Brands that were only very weakly evoked by either of the selected cues were selected. For snacks, Pop-Tarts was selected and for restaurants, Cafe Gardens. In addition, in a pretest, 13 subjects were asked to rate the fit or appropriateness of a small set of restaurants to the selected cues. Brands were selected on the basis of how "appropriate" they were to the selected brands.

The advertisements were designed to be simple animatics; the scripts for each animatic are included in Appendix B. The frames were designed to match the script and represented a set of situations which were interspersed with a repeated exposure of a frame depicting the brand. The situations depicted were selected on the basis of a pretest based on 18 students who rated the appropriateness of each situation to the benefit. The three most appropriate situations for each cue were selected for depicting in the ad as communicating the desired benefit.

Each animatic contained minimal information and was designed essentially to link the cue and the brand. In particular, the emphasis was towards presenting the cue first, and then presenting the brand as the "response" to the cue. This is to be contrasted with a presentation where the cue could have been presented as a "feature" of the brand. Four animatics were developed, two for each product-type, and one for each of the two cues within each product-type. The animatics were displayed to subjects on a large television.

Dependent Measures

Brand verification, brand evocation and brand choice were the major dependent measures. The brand verification and brand verification measures have been discussed at some length in the previous chapter. The major details of these measures and differences from the measures described earlier are mentioned in the following.

Brand verification measure

As for the brand verification study, the brand verification measure was a response time task that was programmed on MEL and run on four personal computers. Subjects were exposed to a series of 160 words which were paired, although subjects were not informed of this fact. The subject's task was simply to indicate whether the word appearing on the screen was a real word or nonsense where brands were considered real words. Each block contained 40 words (or 20 pairs).

Each of the 80 stimulus pairs in the brand verification task was composed of one of 80 cues and one of 20 brands, each brand being presented in association with four different cues. Clusters of brands and cues were not crossed as was done in the verification measure described in Chapter 4. This was not done in order to minimize sensitizing individuals to the link between this measurement stage and the preceding advertisement exposure stage.

Of the 80 pairs, only eight involved the two target brands Pop-Tarts and Cafe Gardens. All subjects saw the two brands, each in association with four cues. The four cues with which each brand was associated were the two experimental cues that were manipulated in the advertising exposure, and two extra cues being the product category and a nonsense cue word. The specific cues for the two brands are given in Table 5-1.

The remaining 72 pairs were generated using the brands from the verification task of Study 2. The cues were generated by choosing two cues that were considered likely to be related to the brand, and two cues which were not (one a real word and one a nonsense word). Of the four cues generated to be associated with each brand, two were motives or benefits like the experimental cues, one was a product category and the other was a nonsense word. Of these 72

Table 5-1: Cues Used in the Verification Measure

		Snacks (Pop-Tarts)	Restaurants (Cafe Gardens)
Cues	Experimental 1	Filling	Different
	Experimental 2	Quick	Healthy
	Product-Category	Toaster Pastries	Restaurant-Bar
	Nonsense	Altrander	Grontlen

filler pairs, eight were cue-snack pairs (four for Snickers and four for Doritos) and eight were cue-restaurant pairs (four for Chaucers and four for Melting Pot). The remaining pairs dealt with unrelated product-types (i.e., drinks, stores, breath fresheners and nonsense brands). A list of all the pairs, in the order presented in one of the eight versions of this measure, are shown in Appendix C.

The eight target pairs appeared in positions 8, 16, 23, 28, 37, 52, 58 and 68. These positions were selected so that the target trials were distributed throughout the verification task, and were chosen so that neither a cue-snack pair nor a cue-restaurant pair occurred within at least the three positions prior to a target pair. Counterbalancing of all the target pairs was achieved by creating a digram-balanced latin square (see Wagenaar 1969) so that the eight target cues appeared once in each of the eight positions and once after each of the other pairs. The positions of the other 72 pairs were held constant. Therefore, there were eight versions of the brand verification measure.

Brand evocation measure

Unlike the brand evocation measure described in the study in Chapter 4 in which brand recall was required in response to three cues, subjects generated a total of 10 evoked sets, one set for each of two cues for five product-types. Following the completion of a practice example, subjects were asked to generate products for each of the ten cues provided. Each cue and product-type appeared at the top of a page within the questionnaire, and lines were provided for listing products and brands. Subjects were given 20 seconds per cue and were not permitted to proceed to the next cue until the 20 seconds had passed.

The four experimental cues (two for snacks and two for restaurants - see Table 5-1) were placed in positions 2, 4, 7 and 9. The position of the target cues was counterbalanced by designing a latin square with the constraint that each product-type appear once and only once in each half of the set of cues (i.e., once at position 2 or 4 and once at position 7 or 9) resulting in four versions of cue order. The filler product-types (drinks, stores and breath fresheners) and the two cues for each of these product-types were fixed in position across all four versions of the questionnaire (see Appendix D).

Brand choice measure

After completing both the verification task and the recall task, subjects were asked to go back to the evoked sets that they generated during the recall task and on each page and to perform the following two tasks. First, they were asked to put a line through all brands that they had recalled, but would not consider consuming even though they had come to mind. Second, they were asked to select the one brand out of those listed that they would most likely choose given a situation where their motives were like those indicated at the top of the page (i.e., the cue).

Advertisement evaluation and brand evaluation measures

Subjects were asked to rate each advertisement after exposure which was at the beginning of the first stage of the study (described below). Each advertisement (i.e., animatic) was rated on six seven-point semantic differentials anchored by good/bad, dislike/like, satisfactory/

unsatisfactory, unfavorable/favorable, interesting/uninteresting and valuable/worthless. The instructions and the layout of the scales is illustrated in Appendix E.

After completion of the major dependent measures in the second stage of the study, subjects completed a final questionnaire assessing brand evaluations and awareness of the purpose of the study (see Appendix F). The brand evaluation part of the questionnaire required evaluation of a set of ten brands on three five-point semantic differential scales anchored with bad/good, dislike/like, low quality/high quality. The target brands, Pop-Tarts and Cafe Gardens, were included at positions 7 and 9. The position of these two target brands was counterbalanced across subjects.

In the second part of the questionnaire, subjects were asked to describe the purpose of the study in which they had just participated and were asked if their responses in this study had been influenced by the "first" and ostensibly unrelated study in which they had participated.

Experimental Procedure

Subjects were recruited for two marketing studies that were being conducted together in one session lasting one hour and fifteen minutes. The two studies making up the one session were conducted by different researchers. At the beginning of the first study in the session, which was essentially a picture evaluation task, subjects were exposed to four animatics, one for each of the two product-types and two fillers (one for Jello No-Bake Cheesecake and the other for Gerber baby food). It was explained to subjects that an animatic is a preliminary advertisement format, and one appropriate for advertising testing.

The position of the product-type, that is, the position of the Pop-Tarts and the Cafe Gardens ads, was counterbalanced. However, there were two versions of each of the ads for Pop-Tarts and Cafe Gardens. The version seen for each brand was linked with the version seen for the other brand. The reason for this was the impossibility of counterbalancing all the within subject variables. An effect of a version of the Pop-Tarts ad on the effect of a version of the Cafe Gardens ad was considered to be unlikely. The position of the ads presented for each product-type was counterbalanced across sessions.

After viewing each advertisement, subjects were asked to complete a set of nine seven-point semantic differential items designed to assess the subject's evaluation of the advertisement. Those viewing the target advertisements three times also saw the filler advertisements three times. Each advertisement was evaluated only after it had been shown the last time (i.e., after one or three times).

The evaluation scales that the subjects used were exactly the same as some that were used in subsequent evaluations of still pictures within the same session. After seeing the advertisements, all subjects were exposed to 35 pictures which they rated using various scales. This first study, including the exposure to, and rating of the animatics, took between 40 to 50 minutes which was presumed to have completely cleared short-term memory of any trace of the advertisements.

The subjects were dismissed from the first study and sent to a room in a different building to complete the second study being conducted by a different researcher. The structure of the second study was a combination of the brand verification measure and the brand evocation measure. Subjects were told that this second study dealt with "brand knowledge" and was made up of two tasks--one on computer (the brand verification task) and the other a pencil and paper test (the brand evocation task). All subjects completed both tasks; half did the verification task first, while the other half completed the recall task first. After completing both these tasks, subjects were asked to go back to the recall questionnaire, and to indicate their brand choices.

Finally, they completed a questionnaire measuring brand evaluations and assessing awareness of the purpose of the study.

A sample of 50 extra subjects were assigned to the second stage of this study. That is, these subjects did not see the advertisements (nor did they complete the picture evaluation study being run by the other researcher) but completed all the dependent measures except for the awareness of purpose questions.

Results and Discussion

The study described tests the hypotheses listed earlier. The analyses presented here have been broken down into four parts corresponding to the four dependent measures. Brand accessibility, measured by brand verification and brand recall, is the major dependent variable in Hypotheses 4 and 5. Accordingly, the first two sections discuss brand verification and brand recall respectively. In the third section, brand choice, the dependent variable in Hypothesis 6 is presented. Finally, in the fourth section, summaries of the other dependent variables (advertisement and brand evaluation) which do not appear in any of the hypotheses are presented.

Brand Verification

In the brand verification task, all subjects provided a response time for each of eight target cue-brand pairs. The mean time taken to verify the brand name in the target pairs, each one consisting of a cue and one of the two target brands; a list of the target cue-brand pairs was given in Table 5-1. As is typically reported for response times, the data were strongly skewed to the right, and reciprocal transformations were taken in order to satisfy the distributional assumptions of the analysis of variance[15]. Therefore, all analyses of the response time data are based on reciprocals of response times unless otherwise noted; however, all effects are reported in terms of the untransformed response times which are measured in milliseconds (msec).

As the response times represent repeated measures, the design was counterbalanced to control for position effects resulting in eight versions of the verification task. In addition, ad order (whether a Pop-Tarts or a Cafe Gardens advertisement was seen first) and task order (whether the subject completed the verification task or the recall task first) were variables resulting from the counterbalancing of ad position and task position respectively.

The data (reciprocals of the response times) were submitted to a repeated measures analysis of variance incorporating the three order variables mentioned above and the three design variables (cue, ad and repetition) to examine for potential order effects. The results of this analysis are summarized in the following. The verification version variable designating the eight different sequences of the eight target cue-brand pairs in the verification task was not significant implying that there was no interaction of cue with the position of the cue. However, there was an interaction of cue (nested in product) with version of the verification measure ($F_{(42,120)} = 7.75$, $MS_e = 1.2 \times 10^{-7}$, $p < 0.001$) implying that there was a main effect of position. An analysis of the contrasts of each position with each subsequent position within each product-type revealed that for the verification of Pop-Tarts and Cafe Gardens, there was a significant decline in response times from the first to the third cue associated with each brand. That is, the second response time was significantly faster than the first, the third significantly faster than the second; there was no significant difference between the fourth and the third. The reduction in response times across position occurred at a decreasing rate. Again, as this interaction of the position of the cue with the cue itself was not statistically significant, it is not essential to analyze the data separately by position of the cue. Nevertheless, as will be seen, despite a lack of an interaction of position with cue, an analysis of response times for the cue in the first position did provide slightly different results than the overall analysis examining the effects of cue regardless of position.

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[15] Both a reciprocal transformation and a natural log transformation were examined. It was found that the reciprocal transformation was more successful in normalizing the response time data. As reciprocal transformations are non-linear, interactions of the repeated measure with other variables must be treated with caution. Accordingly, any significant interactions identified in the analysis of the reciprocal data, but not in the untransformed data, will be noted.

With respect to the two remaining order variables, ad order and task order, only two interactions of these variables with cue and other design variables were found: the interaction of cue (nested in product), ad order and task order ($F_{(6,120)} = 2.52$, $MS_e = 1.0 \times 10^{-7}$, $p < 0.05$); and the marginally significant interaction of ad by cue (nested in product) by task order ($F_{(6,120)} = 1.81$, $MS_e = 1.2 \times 10^{-7}$, $p < 0.10$). Examining these effects by product-type, it was found that the first was marginally significant only in the verification of Pop-Tarts ($F_{(3,63)} = 3.37$, $MS_e = 1.5 \times 10^{-7}$, $p < 0.10$), and the second was significant only in the verification of Cafe Gardens ($F_{(3,60)} = 3.15$, $MS_e = 0.9 \times 10^{-7}$, $p < 0.05$)[16]. As there are no a priori predictions about cue, the ad by cue by task order effect in the verification of Pop-Tarts may be ignored. However, an interaction of ad by cue is predicted by one of the hypotheses, therefore, it is necessary to consider the influence of task order when examining this interaction. For the purposes of the following analyses, the data have been collapsed across the order variables. When examining the ad by cue interaction, a separate analysis by task order of the Cafe Gardens response times was conducted to determine whether the ad by cue interaction is being affected.

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[16] The interaction of cue, ad and task order in Cafe Gardens was significant only in the analysis of the reciprocal response times. The effect was non-significant in the untransformed response times ($F_{(3,63)} = 1.10$, $MS_e = 30{,}175.52$, $p > 0.10$). To be conservative, it was decided to treat the effect as significant and to further investigate the effect of task order on the interaction of cue and ad.

The following discussion of the brand verification response time (RT) data is divided into two parts. The first part addresses H4, which posits that there should be differences in response times as a function of an interaction of ad with cue. The second part addresses H5, which states that the ad by cue interaction should be more apparent after three exposures to the ad versus only one exposure. The first hypothesis relating to the ad by cue interaction is tested in a sample comprising those seeing one of the two ads for each product-type, and those seeing no ads. The second hypothesis relating to the ad by cue by repetition interaction is tested on a sample comprising only those who saw ads. (Clearly, the no ad condition does not allow for a full crossing of ad by repetition.)

Ad by cue interaction

The first hypothesis being tested in this main study (H4) states that brand accessibility increases when the benefit associated with a brand in an ad is later a cue at retrieval. Reported here are the results with brand accessibility measured in terms of brand verification response time. Subjects were exposed to only one ad for each brand, but provided brand verification response times for four cues for each brand. Consequently, the subject's response time for the benefit to which they were not exposed served as a within subject control. In addition, response times were collected from a group who were not exposed to any ads. This enabled a check on whether exposure to the brand name in the ads facilitated brand verification, regardless of ad and cue. The response time data collected from those in the two ad conditions and the no ad condition were submitted to an analysis of variance in which response time was modelled on ad and cue. The results of the analysis of variance are presented in Table 5-2 and the means are presented in Table 5-3.

The analysis reveals no significant interaction of ad with cue implying that the time taken to verify the brand was not dependent on a match between the ad seen and the cue provided in

Table 5-2: Analysis of Variance of Response Times - Controls Included

Source	df	MS (x 10^{-6})	F
Between Subjects Effects			
Ad	1	1.5	0.29
Error	202	5.1	
Within Subjects Effects			
Product	1	90.1	72.57^{***}
Product*Ad	1	2.7	2.21
Error (Product)	202	1.2	
Cue(Product)	6	4.4	3.18^{**}
Cue(Product)*Ad	12	0.7	0.50
Error (Cue(Product))	1212	1.4	

*** $p \leq 0.001$, ** $p \leq 0.05$

the cue-brand pair. As was noted earlier, there was a marginally significant interaction of task order with the ad by cue interaction that should be considered here. Analyzing the ad by cue interaction for each task order (i.e., recall followed by verification or verification followed by recall), it was found that there was a marginally significant interaction of ad and cue in the verification-recall condition ($F_{(3,198)} = 2.29$, $MS_e = 2.8 \times 10^{-7}$, $p < 0.10$). There was no significant interaction of ad and cue in the recall-verification condition. Examining the mean response times in the verification-recall condition, those exposed to the different ad gave a significantly faster response time when cued with the product category cue versus any of the three other cues. In addition, comparing those who saw the "different" ad with those who saw the "healthy" ad, the response times in response to restaurant-bar were significantly faster among those seeing the former.

It appears then, that the interaction of ad, cue and task order among those completing the verification task before the recall task is being driven by this low response time recorded when

Table 5-3: Response Times for Brand Verification by Ad and Cue

a) Mean Response Time (msec) for Verification of Pop-Tarts

		Advertisement		
		Filling (n = 69)	Quick (n = 79)	No Ad (n = 57)
Cues[a]	Filling	536	519	539
	Quick	546	526	554
	Toaster Pastries	548	521	521
	Altrander	555	543	570

b) Mean Response Time (msec) for Verification of Cafe Gardens

		Advertisement		
		Different (n = 69)	Healthy (n = 79)	No Ad (n = 57)
Cues[a]	Different	594	606	632
	Healthy	598	617	619
	Restaurant-Bar	559	591	560
	Grontlen	603	583	604

[a] Subjects provided RTs for all eight cue-brand pairs.

cued by restaurant-bar by those exposed to the different ad. As the hypotheses made no predictions about the effects of the ad (and task order) on the response times following cuing with the product category, this order effect is not of concern to the hypothesis of an interaction of ad and cue being tested here. The hypothesis being investigated predicts lower response times when the ad and cue match; the product category cue was not explicitly mentioned in either ad.

As the hypothesis of the ad by cue interaction that is being tested specifically predicted that response times are faster when the ad and cue match, a set of single degree of freedom contrasts within each product-type were conducted. An examination by product-type of all within subjects contrasts of the matching ad/cue conditions with response times to the other cues to which the same subject responded (i.e., within ad condition) revealed only one marginally significant difference, and that difference was not in the expected direction ($F_{(1,68)} = 3.22$, $MS_e = 2.8 \times 10^{-7}$, $p < 0.10$). Subjects who were exposed to the "different" ad for Cafe Gardens were significantly faster in verifying Cafe Gardens when it was seen after the product category (restaurant-bar) then when it was seen after different. An examination of all the between subjects contrasts of the matching ad/cue conditions with response times generated by others in response to the same cue, but who were in different ad conditions, revealed no significant differences.

The analysis of variance did reveal significant main effects of product and cue nested in product. These effects appear to be essentially stimulus effects. In the first case, the significant effect of product arose because the mean response time for Pop-Tarts was significantly lower than that for Cafe Gardens (539 vs 597 msec respectively; $F_{(1,202)} = 72.57$, $MS_e = 1.2 \times 10^{-7}$, $p < 0.001$). This result presumably reflects a lower awareness of Cafe Gardens relative to Pop-Tarts. This presumption is supported by the observation that a considerable number of subjects (11%) indicated that they had not heard of Cafe Gardens.

In the second case, the effect of cue (nested in product) implies that there was a difference within at least one product-type in terms of the time taken to verify the target brands as a function of the cue ($F_{(6,1212)} = 3.07$, $MS_e = 0.7 \times 10^{-7}$, $p < 0.01$). Post-hoc contrasts between the cues across ads within each product-type (see Table 5-4) revealed that in the verification of Pop-Tarts, the nonsense cue (altrander) led to significantly slower response times than for one of the benefit cues (filling) and the product category cue (toaster pastries). The

Table 5-4: Response Times for Brand Verification Within Each Product-Type by Cue

Pop-Tarts cues:	Total (n = 205)	Cafe Gardens cues:	Total (n = 205)
Filling	530[a]	Different	609[a]
Quick	541[ab]	Healthy	611[a]
Toaster Pastries	530[a]	Restaurant-Bar	572[b]
Altrander	555[b]	Grontlen	596[a]

[a,b] Within each product-type, means with the same letter are not significantly different.

response times for brand verification following the two benefit cues (filling and quick) and the product category were not significantly different from each other. In the verification of Cafe Gardens, the response times following the product category (restaurant-bar) as cue were significantly faster than the time taken to verify the brand after all other cues.

The result suggests that the effectiveness of a product category in cuing a brand is not always assured. It appears that restaurant-bar is an effective cue for Cafe Gardens; however, toaster pastries which is the name of the category including Kellogg's Pop-Tarts (Simmons 1990) is only as effective as the two benefit cues.

Perhaps more important than these stimulus effects is to determine why the hypothesized interaction is not significant nor even directional. A possible reason for the failure to observe the expected interaction of ad and cue is the earlier mentioned effect of position. It was noted earlier that the response time data in this study showed a significant interaction of the order (sequence) of target pairs in the verification task with cue. Specifically, the response time for verifying a brand was slowest the first time that the brand was seen in the verification task. While there was no significant position by cue interaction, it was considered that a significant interaction of ad by cue might be apparent if each subject's first response time for each brand was analyzed[17]. As response times tend to vary considerably between individuals, the average brand verification response time across all pairs except the target pairs and pairs in which the brand was a nonsense word was used as a covariate[18].

The analyses of covariance for a model incorporating ad and cue and their interaction are presented in Table 5-5. All means reported are adjusted for the covariate. As analyses are based on reciprocals of the response times, the reported adjusted means have been converted from reciprocals back to milliseconds and are presented in Table 5-6.

Some support is gained from the analysis of covariance for the hypothesis that brand accessibility is facilitated only when the cue present at retrieval is included in the ad. In the verification of Pop-Tarts, the ad by cue interaction was significant ($F_{(6,193)} = 3.02$, $MS_e = 0.8 \times 10^{-7}$, $p < 0.05$); however, this same interaction was non-significant in the verification of Cafe Gardens.

Contrasts of the adjusted response times for the conditions in which the cue and the ad matched with all other conditions are presented in Table 5-6. Verification of Pop-Tarts was significantly faster among subjects cued with filling and earlier exposed to the filling ad than all other combinations of cues and ads. Verification of Pop-Tarts by those in the quick ad/quick cue condition was significantly different from only three of the other ad/cue conditions; it was significantly slower than the response time for those in the filling ad/filling cue condition and it was significantly faster than the response times recorded in the no ad/quick cue and no ad/nonsense cue conditions.

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[17] Separate analyses of the response times for the brands in the second, third and fourth positions were conducted, but the cue by ad interaction was non-significant in each.

[18] Other covariates that were examined were the first time seen non-target brand verification response times and verification response times for all non-target brands and nonsense brands. The results using each of the covariates were virtually identical.

Table 5-5: Analysis of Covariance of First-Seen Brand RTs - Controls Included

a) Analysis of Covariance for Verification of Pop-Tarts

Source	df	MS (x 10^{-6})	F
Ad	2	4.1	5.42***
Cue	3	0.9	1.19
Ad*Cue	6	2.2	3.02**
Covariate	1	107.4	142.81***
Error	193	0.8	

a) Analysis of Covariance for Verification of Cafe Gardens

Source	df	MS (x 10^{-6})	F
Ad	2	13.8	6.60***
Cue	3	7.0	0.67
Ad*Cue	6	8.6	1.37
Covariate	1	99.9	95.36***
Error	193	1.0	

*** $p \leq 0.001$, ** $p \leq 0.05$

Despite having an overall non-significant ad by cue interaction, verification of Cafe Gardens in both conditions where the ad and cue matched were significantly different from two other conditions. Both the different ad/different cue and the healthy ad/healthy cue conditions were significantly faster than the no ad/product category cue and the no ad/nonsense cue conditions.

However, in addition to the partial support provided to the first hypothesis, the results of the analysis of covariance which includes the control group seeing no ads (see Table 5-5) clearly indicate an effect of ad on verification of both Pop-Tarts and Cafe Gardens. An

Table 5-6: Adjusted RTs by Ad and Cue - Controls Included

a) Adjusted RTs (msec) for Verification of Pop-Tarts

		Advertisement		
		Filling (n = 69)	Quick (n = 79)	No Ad (n = 57)
Cues[a]	Filling	510[q]	613[f]	625[f]
	Quick	579[f]	591[f]	672[fq]
	Toaster Pastries	621[f]	576[f]	580[f]
	Altrander	603[f]	569[f]	676[fq]

b) Adjusted RTs (msec) for Verification of Cafe Gardens

		Advertisement		
		Different (n = 69)	Healthy (n = 79)	No Ad (n = 57)
Cues[a]	Different	660	736	700
	Healthy	649	668	705
	Restaurant-Bar	584	642	839[dh]
	Grontlen	678	669	790[dh]

[a] Subjects provided RTs for all eight cue-brand pairs.

[f,q,d & h] All contrasts significantly different ($p \leq 0.05$) from the condition where the cue and ad matched are indicated by the initial letter of the label identifying the matching cue and ad. For example, all Pop-Tart RTs significantly different from the filling cue/filling ad RT are designated with an "f."

examination of contrasts for both Pop-Tarts and Cafe Gardens shows that those in either of the ad exposure conditions have significantly faster response times than the controls who saw no Pop-Tarts and Cafe Gardens ads prior to participating in the verification task. For Pop-Tarts, the mean response times for each of the ad conditions were as follows: filling - 575 msec, quick - 587 msec, and no ad - 636 msec. For verification of Cafe Gardens, the response times by ad condition were as follows: different - 641 msec, healthy - 677 msec, and no ad - 754 msec. There was no difference in the response times between the two ads within each product-type.

The effect of ad implies that merely seeing an ad featuring the target brand facilitates brand accessibility as measured by the brand verification measure. This result threatened to undermine the fundamental proposition being tested, namely that brand retrieval is facilitated by a cue at retrieval that was earlier associated with the brand. Subjects exposed to say the healthy ad were not expected to be faster in their verification of Cafe Gardens when the cue was different, the product category or a nonsense cue--but they were.

Three points can be made which limit the damage of this finding. First, the significant effect of seeing an ad in facilitating brand verification is moderated by an interaction of ad with cue in the verification of Pop-Tarts. Given that seeing an ad reduces response times, the appropriate contrasts for a conservative test are those comparing the matched ad/cue condition with other ad/cue conditions, but excluding those seeing no ad. Pop-Tarts, at least in the filling ad/filling cue condition, is significantly different from all the other conditions where a Pop-Tarts ad was seen; however, this effect is clearly driven primarily by the low response time obtained in the filling ad/filling cue condition.

Second, comparing a matched ad/cue condition with any condition in which the cue is the product category may not result in a significant difference, particularly if the product category label is one that consumers have previously seen associated with the brand. In the case of Cafe Gardens, the product category cue (restaurant-bar) facilitated response times for Cafe Gardens regardless of ad condition. This effect implies that the brand has been associated with this cue in the past even though this was not done in the ads. On the other hand, for Pop-Tarts, the product category cue (toaster pastries) did not lead to a general facilitation effect. This presumably reflects the fact that the product category label, toaster pastries, has not been associated with Pop-Tarts in the past experience of the subjects.

The third point is that the brand verification measure is apparently measuring perceptual fluency (Jacoby et al 1989). While this was what was intended, it could be argued that a floor effect is operating; in effect, the brand verification measure is perhaps a sensitive measure, but one which is not able to discriminate between cues. The provision of the word, which itself appeared in the earlier seen ad, is so strongly "primed" by the ad itself, that the provision of a cue from the ad is not able to facilitate the verification time. A response time measure which requires more processing and allows discrimination of effectiveness of different cues would be preferred. From this point of view, a brand identification measure in which a visually degraded image of the word is presented, with the degrading steadily reduced while the subject has to identify the brand might be able to detect an effect of the interaction of ad with cue separate from the effect of simply seeing an ad. Such a measure has been used by Fazio (1990). A similar principle operates in the use of word-fragmentation measures such as that used by Nedungadi (1990). In these measures, the word is "degraded" by being presented with some letters missing and the task for the subject is to guess the word and fill the spaces.

Overall, the response time data have provided only limited support for the hypothesis that brand accessibility is facilitated when the benefit cue provided at retrieval matches that associated with the brand at an earlier exposure occasion. The expected result where response times would be faster when the ad and cue matched was only observed for the verification of the Pop-Tarts brand in filling ad/filling cue condition. While both Pop-Tarts and Cafe Gardens were significantly different from at least some ad/cue combinations, it is noted that these differences were from combinations of various cues and the no ad condition. Therefore, they may have arisen by chance or as a consequence of the simple effect of seeing an ad for the brand.

Influence of repetitions on ad-cue interaction

The second hypothesis to be tested by the brand verification data leads to the expectation that the ad by cue interaction will be moderated by repetition, with the interaction being more apparent at the high level of repetition (i.e. three exposures). The eight response times from each individual were submitted to a repeated measures analysis of variance in which response time was modelled as a function of two within subjects factors--product-type and cue nested in product-type--and two between subjects factors--ad and repetition. The control group was excluded from this analysis as the level of the ad variable (no ad) was not (and could not be) crossed with the levels of repetition.

Examining the three-way interaction of ad, cue (nested in product-type) and repetition (see Table 5-7), it is apparent that the hypothesized interaction was insignificant. Given the ordinal nature of this hypothesized three-way interaction stating that the two-way interaction is "bigger" under three repetitions than under one coupled with the failure of the ad by cue interaction to reach significance (as has been reported), it is not surprising that the three-way interaction was not significant.

As the analysis of covariance of first-seen brand response times was successful in identifying an interaction of the ad with cue in explaining the faster response times of Pop-Tarts in the filling ad/filling cue condition versus others, an analysis of covariance was conducted to see whether the three-way interaction was significant. The results of the analysis of covariance of first-seen brand response times modelled on ad, cue and repetition and all their interactions are presented in Table 5-8.

In this analysis of covariance which excludes the control group (c.f., Table 5-5), the effect of ad by cue is significant in the verification of Pop-Tarts as was seen in the earlier analysis. The main effects of ad drop out as would be expected given that the contrasts discussed

Table 5-7: Analysis of Variance of Brand Verification Response Times

Source	df	MS (x 10^{-6})	F
Between Subjects Effects			
Ad	1	2.4	0.50
Reps	1	6.9	1.47
Ad*Reps	1	1.8	0.39
Error	144	4.7	
Within Subjects Effects			
Product	1	78.3	56.21^{***}
Product*Ad	1	4.0	2.89^{*}
Product*Reps	1	0.9	0.62
Product*Ad*Reps	1	1.6	1.11
Error (Product)	144	1.4	
Cue(Product)	6	2.6	1.73
Cue(Product)*Ad	6	0.8	0.53
Cue(Product)*Reps	6	0.4	0.27
Cue(Product)*Ad*Reps	6	1.2	0.80
Error (Cue(Product))	864	1.5	

*** $p \leq 0.001$, * $p \leq 0.10$

earlier showed a simple effect of the no ad condition versus the other ad conditions. However, the hypothesized ad by cue by repetition interaction was not statistically significant. Nevertheless, as was noted earlier, the ad by cue interaction observed for Pop-Tarts was centered on the filling ad/filling cue condition. The hypothesized three-way interaction suggests that the facilitation of brand accessibility should be greater at three repetitions of the ad versus one, but only when the cue matches the ad. Therefore, it would be expected that the response time for the filling ad/filling cue condition would be lower at the higher level of repetition. The adjusted average response time for verification of Pop-Tarts under this matched condition at three exposures was 512 msec and 518 msec at one exposure (see Table 5-9). This small difference

Table 5-8: Analysis of Covariance of First-Seen Brand RTs

a) Analysis of Covariance for Verification of Pop-Tarts

Source	df	MS (x 10^{-6})	F
Ad	1	0.4	0.44
Cue	3	0.6	0.72
Ad*Cue	3	2.5	3.02**
Reps	1	0.0	0.02
Ad*Reps	1	0.2	0.27
Cue*Reps	3	0.0	0.06
Ad*Cue*Reps	3	0.7	0.87
Covariate	1	67.5	80.88***
Error	132	0.8	

a) Analysis of Covariance for Verification of Cafe Gardens

Source	df	MS (x 10^{-6})	F
Ad	1	1.8	1.79
Cue	3	1.4	1.33
Ad*Cue	3	0.6	0.56
Reps	1	4.5	4.46**
Ad*Reps	1	0.0	0.00
Cue*Reps	3	0.6	0.61
Ad*Cue*Reps	3	1.1	1.11
Covariate	1	45.8	44.83***
Error	132	1.0	

*** $p \leq 0.001$, ** $p \leq 0.05$

Table 5-9: Adjusted RTs by Ad and Cue

a) Adjusted RTs (msec) for Verification of Pop-Tarts

		Advertisement	
		Filling (n = 69)	Quick (n = 79)
Cues[a]	Filling	515[q]	621[f]
	Quick	586[f]	596[f]
	Toaster Pastries	629[f]	582
	Altrander	608[f]	576

b) Adjusted RTs (msec) for Verification of Cafe Gardens

		Advertisement	
		Different (n = 69)	Healthy (n = 79)
Cues[a]	Different	667	738
	Healthy	662	673
	Restaurant-Bar	591	652
	Grontlen	684	677

[a] Subjects provided RTs for all eight cue-brand pairs.

[f,q,d & h] All contrasts significantly different ($p \leq 0.05$) from the condition where the cue and ad matched are indicated by the initial letter of the label identifying the matching cue and ad. For example, all Pop-Tart RTs significantly different from the cell where subjects saw the "filling" ad and were exposed to the filling-Pop-Tarts pair are designated with an "f."

was non-significant. Therefore, no evidence was found to support the proposed three-way interaction of ad, cue and repetition.

One unexpected significant effect noted in the analysis of covariance for Cafe Gardens was a main effect of repetition. The verification response times for Cafe Gardens, regardless of cue or ad, were faster for subjects exposed to three repetitions of all the advertisements versus those exposed to only one (adjusted means: 612 msec vs 694 msec). The result is somewhat surprising and would have been more understandable, indeed predicted, if it had interacted with the ad by cue interaction. Perhaps those subjects who were exposed to three exposures of each of the four advertisements, and who had therefore been in the experimental session longer, were keener to leave and were therefore more expeditious on the verification task; however, this fails to explain why there was not also a main effect of repetition on verification of Pop-Tarts. It appears most likely that the difference was one that arose by chance.

Overall, the analysis of the brand verification data provides no support for the hypothesized influence of repetition on increasing the facilitating effect of a ad/cue match. Obviously, a major part of the problem is that there was only limited evidence for the hypothesized interaction of ad and cue in facilitating response times. The proposed three-way analysis relied on a test of one mean, the filling ad/filling cue mean, to see whether this response time was lower at higher repetitions as would be expected.

Brand Evocation

All brands evoked by subjects in response to the four experimental cues ("filling" and "quick" snacks, and "different" and "healthy" restaurants) were coded. However, the essential data points were whether the target brand in each product-type was recalled. Consequently, a recall variable coded as "Yes" or "No" was created for each of the four experimental cues for each individual and the data, the frequencies of recall, were analyzed by fitting a linear model to logit transforms of the data using the CATMOD procedure in SAS. The statistics output by CATMOD for testing the parameters of the model are approximately distributed as chi-squared (SAS 1985).

Recall of the two product-types, snacks and restaurants, was completed by all subjects. For the purposes of analysis, the two product-types were examined separately and regarded as representing stimulus replicates. As within subjects analyses provide greater power, the between subjects analyses reported here will tend to be conservative.

As in the verification task, subjects were exposed to a set of cues, and asked to provide responses for each cue. Unlike the verification task, subjects were asked only for responses to two benefit cues nested in each of the two product-types. Including the product category and the nonsense cues would have been untenable as carryover effects in recall would have been almost inevitable, and the time required for completion would have been considerably more than could be reasonably expected. Accordingly, the recall task included four target cues among a total of ten cues. The position of these four target recall cues was counterbalanced resulting in four versions of the recall task. As the analyses for each product-type were separate, the recall version variable was recoded to indicate cue order, that is, which of two cues within a given product-type was seen first. In effect, there were two variables created, one giving the order of the snack cues, the other the order of the restaurant cues. Two additional order variables in the study were ad order (whether a Pop-Tarts or a Cafe Gardens advertisement was seen first) and task order (whether the subject completed the verification task or the recall task first).

Logit analyses were conducted to examine the potential interaction of the order variables with the three design variables, namely ad, cue and repetition. Due to the limited number of subjects who recalled the target brands, the search for interaction of the design variables was complicated by the fact that many of the cells entering in the model had zero frequencies. In order for the analysis to be conducted, the problem of zero frequencies was solved by adding a low number (0.0005) to all cells. Comparisons of the results using adjusted frequencies versus those calculable with unadjusted frequencies revealed that the results were almost identical.

The logit analyses of the full model including the order variables revealed no effects of any of the order variables, nor any interactions of those variables with the design variables. As there was no interactions of the order variables with the hypothesized interactions, the data were collapsed across the order variables for the following analyses.

As in the discussion of the verification data, the two major hypotheses predicting an ad by cue interaction and a three-way interaction of the ad by cue effect with repetitions are discussed in turn. The analysis of the recall data relating to the ad by cue effect includes the control group who saw no ads, but this group is excluded in the examination of the three-way interaction of cue, ad and repetition.

Advertisement by cue interaction

The first hypothesis examined in this study (H4) states that accessibility of the target brand will be facilitated when the associate linked to the brand is provided as a cue at retrieval but not otherwise. Brand accessibility is measured in this instance by the dependent variable, brand evocation, and more specifically, the frequency of brand recall. Subjects were exposed to one of two ads for each of the two product-types; however, they provided brand recall for four cues for each product-type. Hence, the subjects' recall of the target brand in response to the benefit to which they were not exposed in the ad serves as a within subject control. In addition, recall was measured for a group which was not exposed to any ads. The recall data, coded as "target brand recalled" or "target brand not recalled" for each cue within each product-type, were submitted to a repeated measures logit analysis in which response proportions were modelled on ad and cue. The results of the analysis are presented in Table 5-10 and the response frequencies are presented in Table 5-11.

The hypothesis that recall of the target brands will be highest when the ad and cue match is strongly supported by a significant ad by cue interaction within both product-types ($\chi^2_{(2)}$ =

Table 5-10: Logit Analysis of Recall Measures - Control Group Included

a) Analysis of Variance Table for Recall of Pop-Tarts

Source	df	χ^2
Intercept	1	111.64^{***}
Ad	2	13.92^{***}
Cue	1	2.66^{*}
Ad*Cue	2	16.01^{***}
Residual	0	0.00

b) Analysis of Variance Table for Recall of Cafe Gardens

Source	df	χ^2
Intercept	1	106.87^{***}
Ad	2	4.94^{*}
Cue	1	3.49^{*}
Ad*Cue	2	32.20^{***}
Residual	0	0.00

*** $p \leq 0.001$, ** $p \leq 0.05$, * $p \leq 0.10$

16.01, $p < 0.001$ and $\chi^2_{(2)} = 32.20$, $p < 0.001$ for Pop-Tarts and Cafe Gardens respectively). Follow-up contrasts (see Table 5-12) confirm what is readily apparent from an examination of the recall frequencies: within both product-types, subjects were significantly more likely to recall the target brand when prompted with the cue that was featured in association with the brand in an earlier seen ad than when prompted with some other cue. The only exceptions were in the comparisons of an ad condition with no ad. In the recall of Pop-Tarts, those exposed to the filling ad were not more likely to recall the filling brand than those seeing no ad. Similarly, in the recall of Cafe Gardens, those seeing the healthy ad were not more likely to recall the brand

Table 5-11: Recall of Target Brands for Ad by Cue

a) Proportion Recalling Pop-Tarts

		Advertisement		
		Filling[b] (n = 70)	Quick (n = 80)	No Ad. (n = 60)
Cues[a]	Filling	24.3% 17	3.8% 3	3.3% 2
	Quick	17.1% 12	32.5% 26	3.3% 2

b) Proportion Recalling Cafe Gardens

		Advertisement		
		Different (n = 70)	Healthy (n = 80)	No Ad. (n = 60)
Cues[a]	Different	21.4% 15	7.5% 6	5.0% 3
	Healthy	5.7% 4	41.2% 33	13.3% 8

[a] Subjects were prompted with all four recall cues.

[b] Percentages represent the total percent of those viewing a given ad who recalled the target brand in response to the cue. For example, the first cell represents the proportion of those viewing the filling ad who recalled Pop-Tarts in response to the filling cue and the quick cue. Included in the percentages and counts for each cue are some subjects who recalled Pop-Tarts in response to both cues.

on seeing healthy than those seeing no ad. Nevertheless, as may be seen from the frequencies, the results in both instances are in the expected direction.

In addition to the hypothesized interaction of ad and cue, there were significant main effects of ad in Pop-Tarts, and a marginally significant effect of ad in Cafe Gardens. Follow-up contrasts examining the main effect of ad (and reported in Table 5-12) revealed that in the recall

Table 5-12: Logit Analysis of Recall Measures - Contrasts

a) Analysis of Contrasts in Recall of Pop-Tarts

Contrast	df	χ^2
Ad		
Filling vs Quick	1	2.60
Filling vs No Ad	1	13.37^{***}
Quick vs No Ad	1	5.42^{**}
Ad*Cue		
(Filling vs Quick)*Cue	1	15.91^{***}
(Filling vs No Ad)*Cue	1	0.16
(Quick vs No Ad)*Cue	1	4.29^{**}

b) Analysis of Contrasts in Recall of Cafe Gardens

Contrast	df	χ^2
Ad		
Different vs Healthy	1	2.06
Different vs No Ad	1	0.51
Healthy vs No Ad	1	4.46^{**}
Ad*Cue		
(Different vs Healthy)*Cue	1	31.96^{***}
(Different vs No Ad)*Cue	1	9.65^{**}
(Healthy vs No Ad)*Cue	1	1.96

*** $p \leq 0.001$, ** $p \leq 0.05$

of Pop-Tarts, exposure to either ad led to higher recall of the brand relative to those not exposed to the ads. Neither of the two Pop-Tarts' ads was superior to the other. In the recall of Cafe Gardens, the healthy ad resulted in later recall of the brand by nearly half the sample (41%)

which was significantly higher than the proportion recalling Cafe Gardens following exposure to the different ad (23%). The recall in response to the different ad was somewhat higher than the recall in the no ad condition (17%), but not significantly so.

The results also revealed a marginally significant effect of cue for both Pop-Tarts and Cafe Gardens. In the case of Pop-Tarts, quick was a marginally more effective cue for recall of Pop-Tarts than filling (19.0% vs 10.5%) and healthy was a marginally more effective cue for recall of Cafe Gardens (21.4% vs 11.4%).

Overall, the recall results give considerably stronger support to the first hypothesis than the verification results. However, perhaps the strength of the results should lead to a question about demand artifacts; that is, perhaps subjects recognized the purpose of the study and deliberately "recalled" the target brands to which they were exposed in the encoding stage. It should first be noted that concerns about demand effects with regard to the memory measures are somewhat spurious. The issue is one of whether subjects recalled the brand in a more implicit test of brand memory than is typically given after exposure to ads. That is, in this thesis, the intention was to minimize cues to the previous ad exposure. This is in stark contrast to most tests of advertising effects which provide the subject with a cue to the ad (and the product category) and then ask them to recall the brand. My argument is that explicit cues to ads are not necessarily present in brand choice situations, and therefore, the standard test of brand memory is inappropriate.

Furthermore, memory is not a variable that is commonly considered to be subject to demand. That is, the notion of someone deliberately remembering a brand to satisfy the whims of the researcher does not seem likely. The brand, if remembered, should be included in the evoked set, regardless of the path by which it came to mind. What seems more likely is that subjects might deliberately exclude remembered brands realizing that it came to mind only because of some previous task. For instance, Nedungadi (1987) was not concerned that his priming task would lead people to "deliberately" include the primed brand in the evoked set. However, demand is a concern for judgment and choice variables where a person will give higher ratings or choose the brand that is apparently of interest to the researcher.

Nevertheless, it has been argued that for at least some people, the brand comes to mind without the person knowing why. That is, the effect of the ad may be considered to be an implicit effect. People may recall the brand without explicitly recognizing the influence of an ad that associated a typical retrieval cue with the brand. In effect, explicit memory of the ad is separate from implicit memory used in generating an evoked set. Therefore, the test of "demand" effects can also be cast as a search for evidence of people using implicit memory.

In order to apply a conservative test, all subjects who had correctly reported the purpose of the study were excluded from the analyses, and the previously discussed analyses for ad by cue interactions in each product-type were conducted. The predicted interaction of ad and cue remained in the evocation of Cafe Gardens, but became only marginally significant in the evocation of Pop-Tarts. Similarly, the contrasts were examined and all the contrasts specific to the ad by cue interactions for Pop-Tarts became marginal, all the ones for Cafe Gardens remained significant.

In general, these results are considered to reject the notion of "demand" operating and provide some support to the notion that at least some of the effects were mediated by implicit memory. The shift in some of the results from significance to marginal significance is almost certainly a result of loss of power. This notion is supported by the fact that the main effects of ad and cue also tended to be reduced, in some cases to non-significant levels.

It may be concluded that the results from the brand evocation measure demonstrate that in conditions where a cue at retrieval matches one that was earlier associated with the brand, evocation of the brand is facilitated. Two particularly interesting aspects of this study are that the result appears within subjects, and among those apparently unaware of the purpose of the study. All subjects were asked to recall products in response to a set of ten cues. Four of the cues were experimental cues, two of the four had been seen by the subject in the previous session in association with a target brand. Despite an overall influence of ad, there was a significant advantage to recall when the cue matched the benefit to which the brand had been associated in the ad. The second aspect is that even those apparently unaware of the link between the two studies were influenced and were significantly more likely to recall the brand when the ad and cue matched.

Influence of repetitions on advertisement-cue interaction

The second hypothesis addressed in this chapter (H5) predicts that repetition of an ad increases accessibility of the advertised brand, but only when the cue matches the ad seen. That is, the ad by cue interaction is expected to be greater at higher levels of repetition. The target brand recall data were submitted to a logit analysis; the response proportions were modelled as a function of the three independent variables: advertisement version (i.e., the associate presented at exposure), the cue present at retrieval and number of repetitions. The results of the logit analysis for the recall of Pop-Tarts and Cafe Gardens are presented in Table 5-13 and the frequencies are presented in Table 5-14.

The analysis reveals that the ad by cue by repetition interaction was not significant in either product-type. The contingency tables (Table 5-14) reveal what appears to be directional evidence in the filling ad/filling cue cells for Pop-Tarts and in the healthy ad/healthy cue cells for Cafe Gardens. However, the shift upwards in recall from one to three repetitions for these two matching ad/cue conditions is matched by a similar shift upwards in recall from one to three exposures for the other cue. A check on these contrasts confirmed that there was no evidence

Table 5-13: Logit Analysis of Recall Measures

a) Logit Analysis of Recall of Pop-Tarts

Source	df	χ^2
Intercept	1	71.63***
Ad	1	2.26
Cue	1	7.22**
Ad*Cue	1	14.69***
Reps	1	1.61
Ad*Reps	1	0.15
Cue*Reps	1	0.18
Ad*Cue*Reps	1	0.24
Residual	0	0.00

b) Logit Analysis of Recall of Cafe Gardens

Source	df	χ^2
Intercept	1	59.74***
Ad	1	1.27
Cue	1	0.95
Ad*Cue	1	24.59***
Reps	1	0.05
Ad*Reps	1	3.58*
Cue*Reps	1	2.06
Ad*Cue*Reps	1	0.07
Residual	0	0.00

*** $p \leq 0.001$, ** $p \leq 0.05$, ** $p \leq 0.10$

Table 5-14: Recall of Target Brands for Ad by Cue by Repetition

a) Proportion Recalling Pop-Tarts

		Advertisement			
		Filling		Quick	
	Reps:	1[b] (n = 33)	3 (n = 37)	1 (n = 40)	3 (n = 40)
Cues[a]	Filling	18.2% 6	29.7% 11	2.5% 1	5.0% 13
	Quick	12.1% 4	21.6% 8	32.5% 13	32.5% 13

b) Proportion Recalling Cafe Gardens

		Advertisement			
		Different		Healthy	
	Reps:	1 (n = 33)	3 (n = 37)	1 (n = 40)	3 (n = 40)
Cues[a]	Different	24.2% 8	18.9% 7	2.5% 1	12.5% 5
	Healthy	9.1% 3	2.7% 1	37.5% 15	45.0% 18

[a] Subjects were prompted with all four recall cues.

[b] Percentages represent the total percent of those viewing one repetition of the filling ad, and who recalled Pop-Tarts in response to the filling cue and the quick cue. Some subjects recalled Pop-Tarts in response to both cues.

to support the second hypothesis that repetition would be effective in increasing brand accessibility (as measured by evocation) only for those conditions where the ad and cue matched.

Other effects noted in the logit analysis was a main effect of cue for Pop-Tarts only, and the interaction of ad and cue. This interaction, predicted by the first hypothesis, and the main effect of cue, were discussed in the previous section. It may be remembered that the main effect of ad that was reported earlier reflected the difference between seeing an ad and not seeing an ad. No ad effect was found here nor was expected as this analysis excludes the control group that did not see any ads.

Despite finding the predicted interaction of ad and cue on recall, the interaction of this effect with repetitions was not found. This is surprising given that the influence of repetition is generally well-accepted. The result is also surprising in that it was more likely that one, and even three repetitions would not be sufficient to reach a threshold to assure the effects observed in this study. It appears that one repetition of the ad was sufficient to create a level of awareness for the brand equivalent to that achieved by three repetitions. Three points should be noted here. First, the format of each ad ensured that there were three "repetitions" of the link from the benefit to the brand within the ad. Perhaps the success of even just one exposure on increasing brand recall is attributable to just one ad exposure achieving "effective frequency" (Krugman 1972). A second possibility is that when a cue is provided at retrieval, effective frequency is lower than our generally accepted notion of effective frequency. Finally, perhaps the forced exposure ensured in the lab environment effectively overrode the need for three exposures.

Brand Choice

The final hypothesis (H6) states that brand choice is expected to reflect increases in brand accessibility. One problem, of course, is that the two measures of brand accessibility gave mixed results. While the brand verification measure did not give results to indicate that brand accessibility had increased, it was clear that the brand evocation results supported the notion that brand accessibility had increased. Hypothesis 6 stated the expectation that increasing brand accessibility would lead to a greater probability of evocation, and in turn a greater probability of choice. This section reports on the brand choice and examines whether brand choice increased along with increased brand accessibility (or at least with the increase in the probability of evocation), and ideally, will show that brand evaluations were not changed by the manipulations thereby eliminating a competing explanation suggesting that choice was influenced, but the evaluation process was the mediator of the effect.

The choice data were similar to the recall data in structure. A choice variable coded as "Yes" or "No" depending on whether the target brand was chosen was created for each of the four experimental cues seen by each individual. As for the preceding analyses, the data are treated as if collected from two groups corresponding to the two product-types; however, the cue within each product-type given at recall was treated as a within subjects factor. One key difference between the recall data and the choice data is that a strong case may be made for the potential demand effects in the case of the judgment variables including choice. By the time subjects came to complete the choice measure, many of the subjects may have had a good idea of the purpose of the study; just over one quarter of all subjects participating in both the ad exposure and the brand retrieval stages (27%) appeared to have guessed at least part of the purpose of the study by the end of the session. Hence, any effects seen may have been the result of demand; that is, subjects may have guessed that the experimenter wanted them to choose the brand in the condition where the cue matched that given earlier in the ad. This possibility will be discussed further after reporting the results of the analysis of the data.

To check for effects of order, each of the three order variables was included in a model that contained the three design variables (cue, ad version and repetitions). A number of the contingency tables submitted to analysis had zero frequencies (i.e., no-one chose the target brand). An adjustment was made by adding 0.0005 to all cells in order to allow estimation of a model. There were no interactions of any of the order variables with any of the design variables; therefore, for the purposes of the following analyses, the data are collapsed across the order variables.

As H6 simply expects choice to be affected in the same way as evocation, the reporting of the results will parallel the reporting of the evocation results in the previous section. First, the data on the influence of matching ad and cue on choice on the target brand are presented and discussed. Second, the data relating to the effects of repetition with ad and cue on choice are presented.

Ad by cue interaction

The choice data were submitted to a logit analysis where choice was modelled on ad and cue; the results of the analysis are presented in Table 5-15, the frequencies in Table 5-16. Despite directional support, the logit analysis failed to support the hypothesis that choice is facilitated when the cue provided at retrieval matches that with which the brand was encoded. However, it was noted that this analysis is very low in power; out of a sample of 210 people, only 15 people chose Pop-Tarts and 16 people chose Cafe Gardens (see Table 5-16). To further investigate the potential of an influence of the manipulations on brand choice, the analysis was rerun using the marginal probabilities (as opposed to the logit transforms of these probabilities)[19]. Using this more sensitive analysis, it is clear that the manipulations had at least some influence on the choice of brands (see Table 5-15). The interaction of ad and cue was significant in the choice of Cafe Gardens ($\chi^2 = 7.76$, $p < 0.05$), but not in the choice of Pop-Tarts.

As in the analysis of the recall data, contrasts of the different ad conditions by the two cues were examined (analyzing both logits and untransformed marginal probabilities--see

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[19] Although this analysis tends to be more sensitive, the problem is that the data do not necessarily fit the distributional requirements of linear modelling; in particular, the response proportions predicted using the estimates are not constrained to be between zero and one.

Table 5-15: Logit Analysis of Choice Measures - Control Group Included

a) Analysis of Variance Table for Choice of Pop-Tarts

Source	df	χ^2 (Logits)	χ^2 (Marginal Probabilities)
Intercept	1	0.32	16.60***
Ad	2	0.08	16.16***
Cue	1	0.00	0.02
Ad*Cue	2	3.01	3.36
Residual	0	0.00	0.00

b) Analysis of Variance Table for Choice of Cafe Gardens

Source	df	χ^2 (Logits)	χ^2 (Marginal Probabilities)
Intercept	1	0.42	17.53***
Ad	2	2.29	5.71*
Cue	1	0.03	0.72
Ad*Cue	2	0.98	7.76**
Residual	0	0.00	0.00

*** $p \leq 0.001$, ** $p \leq 0.05$, * $p \leq 0.10$

Table 5-17). Despite the non-sigificant omnibus F statistic for logistic model for the ad by cue interaction for both Pop-Tarts and Cafe Gardens, in contrasting the filling ad with the quick ad, it was found that subjects were marginally more likely to choose Pop-Tarts when given the cue which matched the ad seen as opposed to the non-match condition. In the more sensitive analysis allowed by the modelling of the marginal probabilities, the ad by cue interaction for the filling ad versus the quick ad was again marginally significant. In the choice of Cafe Gardens, choice

Table 5-16: Choice of Target Brands for Ad by Cue

a) Proportion Choosing Pop-Tarts

		Advertisement		
		Filling[b] (n = 70)	Quick (n = 80)	No Ad (n = 60)
Cues[a]	Filling	7.1% 5	2.5% 2	0.0% 0
	Quick	2.9% 2	7.5% 6	0.0% 0

b) Proportion Choosing Cafe Gardens

		Advertisement		
		Different (n = 70)	Healthy (n = 80)	No Ad (n = 60)
Cues[a]	Different	4.3% 3	2.5% 2	1.7% 1
	Healthy	0.0% 0	11.2% 9	1.7% 1

[a] Subjects were prompted with all four recall cues.

[b] Percentages represent the total percent of those viewing a given ad who chose the target brand in response to the cue. For example, the first cell represents the proportion of those viewing the filling ad who recalled Pop-Tarts in response to the filling cue. Despite being possible, none of the subjects chose the target brand in response to both cues.

was significantly more likely when the ad matched the cue in the contrast of the different ad with the healthy ad, and marginally more likely in the contrast of the healthy ad with no ad.

In view of some support for the hypotheses that choice would be facilitated by the manipulations of ad and cue, it was necessary to again address the issue of demand effects. A first point to note is that the relatively low level of choice of the target brands suggests that even

Table 5-17: Logit Analysis of Choice Measures - Contrasts

a) Analysis of Contrasts in Choice of Pop-Tarts

Source	df	χ^2 (Logits)	χ^2 (Marginals)
Ad			
Filling vs Quick	1	0.01	0.00
Filling vs No Ad	1	0.07	7.71**
Quick vs No Ad	1	0.07	8.88**
Ad*Cue			
(Filling vs Quick)*Cue	1	3.01*	3.29*
(Filling vs No Ad)*Cue	1	0.00	1.13
(Quick vs No Ad)*Cue	1	0.00	2.05

b) Analysis of Variance Table for Choice of Cafe Gardens

Source	df	χ^2 (Logits)	χ^2 (Marginals)
Ad			
Different vs Healthy	1	0.04	4.33**
Different vs No Ad	1	0.02	0.08
Healthy vs No Ad	1	2.26	5.37*
Ad*Cue			
(Different vs Healthy)*Cue	1	0.05	7.69**
(Different vs No Ad)*Cue	1	0.04	1.61
(Healthy vs No Ad)*Cue	1	0.93	3.51*

** $p \leq 0.05$, * $p \leq 0.10$

though subjects may have been aware of the purposes of the study, they were not particularly motivated to "help" the researcher. The potential for demand effects on choice was investigated in the same way as for brand evocation. All subjects who gave responses that indicated that they appeared to be aware of the link between the "first study" in which they evaluated ads and pictures, and the "second study" in which they provided measures of brand retrieval, were excluded from the analysis. The significant ad by cue interaction for the choice of Cafe Gardens (observed for the analysis of marginals) disappeared; however, the other significant and marginally significant results also disappeared. Similarly, an examination of the contrasts based on those apparently unaware of the purpose of the study revealed a very similar picture. Virtually all effects (in both the analysis of logits and of marginals) disappeared or were reduced to marginal significance. The only exceptions were the significant quick versus no ad effect and the interaction of ad and cue in the comparison of those exposed to the different ad versus the healthy ad; these effects remained significant.

The disappearance or reduction of the observed interactions of ad and cue may suggest that demand was operating. However, as all other effects (including effects of the between subjects variable, ad) also reduced to marginal significance or disappeared, it seems that the major factor driving this lack of result after the exclusion of those aware is largely a problem of low power. As has been noted, the numbers in the cells were already so low in the analysis of the choice data that an adjustment (of adding 0.0005 to each cell) had to made in order to perform the analysis. In addition, most effects only appeared in the analysis of the more sensitive analysis of marginals. After excluding those apparently aware of the purpose of the study, all cells had lower frequencies. One contrast became inestimable because of too few choices of the target brand.

Finally, the possibility of any effect of ad and cue on brand choice (albeit weak) being mediated by evaluation as opposed to evocation needs to be addressed. It has already been seen that the interaction of cue and ad influenced the level of evocation. To eliminate the possibility of the interaction of ad and cue operating through evaluation (in addition to or in place of recall), ideally, it would be shown that this interaction did not affect evaluation. That is, evaluation would be modelled as a function of ad and cue; however, this is not possible as evaluation for a brand was measured only once whereas cue was a within subjects variable (and so recall of each brand was a repeated measure).

Nevertheless, the influence of ad on evaluation was examined. In the evaluation of Pop-Tarts, there was no significant difference in the evaluations of brands by those exposed to one of the two Pop-Tarts ads versus those who who saw no ads (3.5 for filling, 3.6 for quick and 3.8 for no ad). Similarly, there was no difference in the evaluations of the brand by those exposed to the filling ad versus those exposed to the quick ad. There was a marginally significant influence of ad ($F_{(2,181)} = 2.94$, $p \leq 0.10$). Examining the contrasts of the evaluations of brands for the three ad groups, it was found that those exposed to the different ad gave more negative evaluations to the ads than those exposed to the healthy ad or exposed to no ad at all (3.5 for both healthy and no ad versus 3.2 for different). Therefore, the ads did not heighten the evaluations of the brands, and in fact, made them marginally lower in at least one case.

Overall, the choice data appear to provide only limited support to the notion that choice is more likely if the benefit used as a cue was associated with the target brand in an earlier seen ad. It was predicted that choice would show weaker effects than recall as choice follows from recall only to the extent that the recalled target brand is favored relative to other brands included in the evoked set. However, at least part of the reason for the weak result is the limited number of people choosing the target brands at all. This leads to very low frequencies in some of the cells and reduces the power of the logit analysis to identify effects. This low power was partially countered by using the more sensitive analysis of the marginal probabilities. Finally, excluding those aware of the purpose of the study resulted in virtually all significant effects becoming non-significant or marginal.

Influence of repetitions on advertisement-cue interaction

Given the lack of an effect of repetitions on the advertisement-cue interaction in the recall data, it was not anticipated that there would be any effect of repetitions on the choice data. This was confirmed by the non-significance of the ad by cue by repetition term in Table 5-18. The only significant effects in this model appeared in the analysis of marginal probabilities as opposed to the analysis of logits. The hypothesized interaction of ad and cue was significant for Cafe Gardens and marginally significant for Pop-Tarts, and there was a significant main effect of ad the choice of Cafe Gardens. These effects have been discussed in the earlier discussion of the influence of ad and cue on choice in the preceding section. As mentioned above, at least part of the reason for no effects in the choice data in the logit analysis was the low frequencies of people choosing the target brands which reduces the power of the analysis. The frequencies of those choosing the target brands are presented in Table 5-19.

Advertisement Evaluations and Brand Evaluations

This final section provides a summary of the other measures, specifically ad evaluations and brand evaluations. The relevance of these measures to the hypotheses will be noted and examined. In particular, the influence of the ad evaluations on recall, and the relationship between ad evaluations and brand evaluations are discussed.

Table 5-18: Logit Analysis of Choice Measures for Ad by Cue by Repetition

a) Analysis of Variance Table for Choice of Pop-Tarts

Source	df	χ^2 (Logits)	χ^2 (Marginals)
Intercept	1	105.67***	16.69***
Ad	1	0.01	0.00
Cue	1	0.11	0.04
Ad*Cue	1	2.23	3.22*
Reps	1	0.26	0.59
Ad*Reps	1	0.26	0.59
Cue*Reps	1	0.34	0.65
Ad*Cue*Reps	1	0.34	0.65
Residual	0	0.00	0.00

b) Analysis of Variance Table for Choice of Cafe Gardens

Source	df	χ^2 (Logits)	χ^2 (Marginals)
Intercept	1	0.40	15.89***
Ad	1	0.07	4.47**
Cue	1	0.04	0.94
Ad*Cue	1	0.09	7.73***
Reps	1	0.00	0.32
Ad*Reps	1	0.00	1.20
Cue*Reps	1	0.00	1.12
Ad*Cue*Reps	1	0.00	0.30
Residual	0	0.00	0.00

*** $p \leq 0.001$, ** $p \leq 0.05$, * $p \leq 0.10$

Table 5-19: Choice of Target Brands for Ad by Cue by Repetition

a) Proportion Choosing Pop-Tarts

		Advertisement			
		Filling		Quick	
	Reps:	1[b] (n = 33)	3 (n = 37)	1 (n = 40)	3 (n = 40)
Cues[a]	Filling	3.0% 1	10.8% 4	2.5% 1	2.5% 1
	Quick	3.0% 1	2.7% 1	7.5% 3	7.5% 3

b) Proportion Choosing Cafe Gardens

		Advertisement			
		Different		Healthy	
	Reps:	1 (n = 33)	3 (n = 37)	1 (n = 40)	3 (n = 40)
Cues[a]	Different	3.1% 1	5.4% 2	2.5% 1	2.5% 1
	Healthy	0.0% 0	0.0% 0	15.0% 6	7.5% 3

[a] Subjects were prompted with all four recall cues.

[b] Percentages represent the total percent of those viewing a given ad a given number of times who chose the target brand in response to the cue. For example, the first cell represents the proportion of those viewing the filling ad once who recalled Pop-Tarts in response to the filling cue. Despite being possible, none of the subjects chose the target brand in response to both cues.

Advertisement evaluations

Following exposure to the ads in the first stage of the study, subjects were asked to provide ratings of the ads. Analysis of the ad evaluation scales, based on subjects' evaluations of all four advertisements, revealed a Cronbach alpha of 0.96.

The mean ratings on seven-point scales given by subjects to the four animatics were submitted to a one-way, repeated measures, analysis of variance (see Table 5-20). That analysis

Table 5-20: Analysis of Ad Evaluations

a) Analysis of Variance of Ad Evaluations

Source	df	MS	F
Ad	3	243.9	155.51***
Error (Ad)	444	1.6	

b) Mean Ad Evaluations

Advertisement	Mean Evaluation	n
Pop-Tarts	2.94	150
Cafe Gardens	3.02	150
Jello No-Bake Cheesecake	5.52	149
Gerber (baby foods)	4.72	150

c) Contrasts of Mean Ad Evaluations

Source	df	F
Pop-Tarts		
vs Cafe Gardens	1	0.70
vs Jello	1	346.38***
vs Gerber	1	121.35***
Cafe Gardens		
vs Jello	1	286.82***
vs Gerber	1	107.55***
Jello vs Gerber	1	40.88***

*** $p \leq 0.001$

revealed that the ratings given to the four animatics differed significantly ($F_{(3,444)} = 155.51$, $MS_e = 243.9$, $p \leq 0.001$). While the ratings for the Pop-Tarts and the Cafe Gardens animatics did not differ (2.94 and 3.02 respectively), the ratings were significantly lower than for the Gerber animatic (4.72) which was significantly lower than for the Jello animatic (5.52).

It is noteworthy that the ads designed for this study, the Pop-Tarts and the Cafe Gardens ads, were rated particularly poorly relative to the two commercially produced animatics that were used as fillers. A more interesting aspect is that despite these negative evaluations (the mean ratings were below the midpoint of the semantic differentials), the predicted interaction of ad and cue on recall, and to some extent choice, still obtained.

The mean ratings given by subjects to the two versions of the ads for the target brands were submitted to a two-way analysis of variance (see Table 5-21) which showed that there was a marginally significant difference in the rating of the two Pop-Tarts ads with the quick ad being rated better than the filling ad (3.12 vs 2.74); there was no significant difference in the ratings of the two Cafe Gardens ads.

No hypotheses were developed addressing the potential relationship between the evaluation of the advertisements and memory of the brand at some later presentation of a cue that was included in the advertisement; nevertheless, it was considered useful to see if affect toward the ad mediated any of the memory effects. For instance, Keller (1991a) suggests that better liked ads are better remembered. In this study, the influence of ad evaluation on brand memory (as opposed to ad memory) can be tested. Accordingly, recall was modelled on ad, cue and a dichotomous measure of ad evaluation. The dichotomous measure was calculated as the median rating given to the two ads for each brand. The results of this analysis produced only the effects that have been reported and discussed earlier. Neither the main effect of ad evaluation, nor any interactions including ad evaluation, reached significance. This implies that the increase in brand

Table 5-21: Analysis of Evaluations of Target Ads

a) Analysis of Variance of Pop-Tarts Ad Evaluations

Source	df	MS	F
Ad (Filling vs Quick)	1	5.4	3.06*
Error	148	1.7	

b) Analysis of Variance of Cafe Gardens Ad Evaluations

Source	df	MS	F
Ad (Different vs Healthy)	1	1.6	0.75
Error	148	2.1	

c) Mean Evaluations for Ad Evaluations

Advertisement	Mean Evaluation	n
Pop-Tarts		
Filling	2.74	70
Quick	3.12	80
Cafe Gardens		
Different	2.91	70
Healthy	3.12	80

* $p \leq 0.10$

accessibility resulting from the ad and from the provision of a cue that was used in the ad is independent of the liking of the ad.

Brand evaluations

At the conclusion of the study, almost one and a half hours after viewing the ads, subjects were asked to provide evaluations of a set of brands of which Pop-Tarts and Cafe Gardens constituted two members. First, an analysis to determine whether there was a relationship between the evaluation of the ad and the evaluation of the brand was conducted. The regression analysis showed that there was no significant relationship between the evaluation of the Pop-Tarts' ad and the evaluation of the brand. However, the evaluation of the ad parameter was marginally significant in the predicting the evaluation of Cafe Gardens ($F_{(1, 128)} = 3.26$, $MS_e = 0.6$, $p \leq 0.10$). Although the ad evaluation parameter was significant, it accounted for only 2.5% of the variance associated with the brand evaluation. It seems likely that the marginal significance of the ad evaluation parameter is due to the fact that Cafe Gardens was found to be relatively unknown as reflected by the substantial proportion (11%) who did not rate the brand in the evaluation task and reported that they had not heard of the place.

As in the examination of the relationship between ad evaluations and recall, no a priori hypotheses regarding brand evaluation and recall were formed. However, prior research (Nedungadi and Hutchinson 1983) suggests that more favored brands tend to be recalled. Using a dichotomous variable indicating evaluation of the brand based on a median split of all evaluations for the brand, recall was modelled on ad, cue and brand evaluation. The resulting analysis (see Table 5-22) showed a main effect of brand evaluation in addition to the interaction of ad by cue on the recall of both Pop-Tarts and Cafe Gardens. Therefore, there was an effect of brand evaluation independent of the influence of the manipulations of ad and cue on the recall of the brand.

General Discussion

This chapter has presented a study that manipulated the brand associate (cue) included in an advertisement and the cue present at retrieval, and examined the influence of a match in the ad cue and the retrieval cue on two measures of brand accessibility (brand verification and brand evocation) and brand choice.

Table 5-22: Logit Analysis of Choice Including Brand Evaluation

a) Influence of Brand Evaluations on Recall of Pop-Tarts

Source	df	χ^2
Intercept	1	74.34^{***}
Ad	2	6.50^{**}
Cue	1	0.45
Ad*Cue	2	10.21^{**}
Evaluation (Pop-Tarts)	1	5.58^{**}
Residual	5	5.80

b) Influence of Brand Evaluations on Recall of Cafe Gardens

Source	df	χ^2
Intercept	1	68.87^{***}
Ad	2	7.07^{**}
Cue	1	2.22
Ad*Cue	2	25.98^{**}
Evaluation (Cafe Gardens)	1	7.23^{**}
Residual	5	0.70

*** $p \leq 0.001$, ** $p \leq 0.05$

The two measures of brand accessibility were taken to test the first hypothesis. It was anticipated that brand accessibility would be higher when there was a match between the cue present at retrieval and the cue that had been associated with the brand in an earlier seen ad. The results from the brand evocation measure gave very strong support to the hypothesis showing that recall of the brand was significantly facilitated when the cue at retrieval matched the associate with which the brand was linked in the advertisement shown.

Furthermore, there appeared to be at least some evidence that at least part of the influence of the interaction of the ad with the cue was mediated by implicit memory. Specifically, when all those subjects who had guessed the connection between the exposure and retrieval stages of the study were excluded and the analyses were rerun, there was still an effect of the ad by cue interaction, albeit marginal for the recall of Pop-Tarts.

Although the brand evocation results clearly supported the hypothesis, the results from the brand verification data gave virtually no support. The analysis of all the brand verification response times failed to support the first hypothesis. It had been anticipated that response times would be lower when the cue preceding the appearance of the target brand was one that was earlier linked to the brand in an ad. Nevertheless, a subsequent analysis of only the first given response time for each brand did reveal the anticipated effect in the verification of Pop-Tarts, but not in the verification of Cafe Gardens. Overall, the verification data provided only limited support for the notion that an ad/cue match increases brand accessibility, at least as measured by brand verification.

One possible problem with the response time measure is that it may not have been a measure sensitive to the manipulations that were made. However, it was noted that there were some cue effects. Product category was a useful cue for facilitating verification of Cafe Gardens; however, it did not prove to have any influence on the response times for Pop-Tarts relative to the benefit cues. This could be taken to suggest that the influence of encoding the cue-brand link is only effective after many exposures. Pop-Tarts are rarely, if ever, considered as toaster pastries; in contrast, Cafe Gardens is more commonly thought of as a restaurant and/or bar.

Paradoxically, an alternative problem that was discussed was that the brand verification measure might be too sensitive and be operating at a virtual floor thereby limiting the discriminating power of the measure. Evidence to support this conclusion was that there was a significant effect of ad when the control group was included, indicating that merely seeing an ad featuring the target brand reduced the time taken to verify the target brand relative to a control group who saw no ads. Whereas the brand verification measure was sensitive, it appears that it may have been too insensitive to the influence of other variables, specifically, the effects of different cues. Consequently, it might be necessary to consider alternative response time measures such as word-fragment completion tasks or identification of a degraded visual stimulus that may be both sensitive and discriminating.

While the verification results gave only limited support to this hypothesis, the recall results provided clear and strong support. As the recall measure is one that is more likely related to the process of brand retrieval at a brand choice occasion, the finding would appear to be an important one. To the extent that marketers can manipulate the cues in the retrieval environment, or ensure that their brand is encoded in assocation with a cue that is likely to be present at retrieval, the accessibility, and so the likelihood of recall of the brand, can be increased.

The second hypothesis examined related to the expectation that repetition would be effective only when the ad and cue matched. As the ad by cue interaction received only limited support in the verification data, it was not surprising that the moderating influence of repetition on the ad by cue interaction failed to obtain in the verification data. However, given the ad by cue interaction apparent in the evocation data, it seemed likely that the influence of repetition would be apparent only when the ad and cue matched. Somewhat surprisingly, the interaction of repetition with the ad by cue interaction was not observed. Indeed, there was no effect of repetition. A possible explanation is that perhaps the provision of the cue was such a powerful facilitator of accessibility that the small difference between one and three repetitions of the ad was insignificant. It is noteworthy however, that this explanation implies that one exposure to the ad can be as effective as three repetitions on recall, as long as there is a match in the cues present in the ad and in retrieval. Another factor that must be considered is that it was a forced exposure.

The final hypothesis examined related to choice. It was expected that the ad and cue (and repetition) manipulations would lead to higher accessibility which would be reflected by higher choice. As there is no evidence that the levels of repetition used influenced accessibility at all, repetition is not considered any further here. Despite the brand verification measure giving very limited evidence of increasing brand accessibility, it was clear from the evocation measure that the target brands were more likely to be evoked when there was a match in the ad and the cue. It was anticipated therefore, that this increase in accessibility would translate into an increase in choice of the target brands. However, the logit analyses failed to show the anticipated effect. An analysis of the untransformed marginal probabilities revealed the anticipated effect. The constraint here is that the untransformed data may not satisfy the distributional requirements for a linear analysis and may therefore provide invalid results. However, some reassurance can be taken from the fact that all of the effects appearing in the analysis of the choice data appeared as effects in the analysis of evocation.

Overall, there is some evidence for an effect of ad/cue match on choice; the data are in the right direction, and an analysis of the marginal probabilities supports they hypothesis. It is also clear that the evidence is limited. A number of limitations with the brand choice data are discussed in the following. First, choice from the evoked set is expected to be mediated by evaluations and therefore, it was expected that only some of those recalling the target brand would also choose the brand. The effect at the choice level was expected to be weaker; however, the particularly low frequencies observed are likely to have weakened the power of the analysis.

Furthermore, choice is a variable that is more subject to demand. That is, any effect observed could be attributable to subjects guessing the purpose of the study and providing the responses that they thought were wanted. This was a potential problem given that about a quarter of the subjects had guessed at the purpose of the study by the end; the choice measure was taken just before the post-experimental questionnaire. An analysis of choice after excluding all subjects aware of the purpose did lead to the disappearance of the ad/cue effect; however, there was a confounding problem of already low power made lower making it difficult to distinguish between evidence for demand effects and evidence of lack of power. Overall, the low levels of choice of the target brands appear to indicate that if aware of the purpose of the study, subjects were not particularly motivated to make choices that would assist the research.

Finally, it is possible that the influence of the ad/cue effect on choice was being mediated by evaluation. As has been noted, the design did not allow for the complete separation of evocation and evaluation effects. Specifically, brand evaluation was measured only once at the conclusion of the study whereas evocation was measured twice for each brand, each time in association with a different cue. Nevertheless, the evidence shows that the ads did not appear to influence the evaluations of the brands; the one exception was the significantly lower evaluation for Cafe Gardens among those exposed to the different ad. In order to entirely eliminate the competing explanation of mediation by evaluation, it would have been necessary to have measured evaluation of the brand in the context of the retrieval cue. Nevertheless, Nedungadi (1990) clearly showed an influence of priming on choice that was mediated by brand accessibility with no effect on brand evaluation. Overall, the brand choice data reported here provide limited support for the hypothesis that increasing brand accessibility will lead to an increase in choice.

In the final chapter, these results and those from the studies presented in Chapter 4 will be discussed in light of the objectives of this dissertation. In particular, the role of these studies in defining the conceptual framework introduced in Chapter 3 will be highlighted, and the implications for understanding brand awareness, brand choice and brand equity will be discussed.

CHAPTER 6
CONCLUSIONS, IMPLICATIONS AND FUTURE RESEARCH

It has been argued in this thesis that some alternative perspectives are necessary for understanding brand equity. Practitioners have long been interested in the value of brands, and recently, many academic researchers have turned their attention to this crucial topic with a view to understanding the basis of brand equity, and the way in which it may be measured and managed.

I have argued that brand equity may be considered to be a function of brand choice. That is, a brand has equity to the extent that consumers are biased towards purchasing and using that brand over alternatives. This bias may be reflected in the preparedness of consumers to pay a premium and/or a tendency to buy it repeatedly. When considering the ways of influencing choice, it is common for people to think in terms of the evaluation of the brand as the most obvious way of biasing choice. Seeking to ensure that the brand is "preferred" is one means of systematically influencing choice; ensuring inclusion of the brand in the evoked set is an alternative, and indeed a necessary means, of biasing choice.

A number of researchers have pointed to the critical importance of memory in consumer behavior (e.g., Alba et al. 1991; Alba and Hutchinson 1987; Bettman 1979; Lynch and Srull 1982). Manipulations that ensure the evocation of positive features of a brand or spontaneous evocation of the attitude toward a brand (e.g., Fazio 1986) are examples of more enduring influences on brand choice mediated by memory effects on the evaluation proccss. The application of the same approach to ensuring evocation of the brand, a necessary condition to choice, appears to have been largely overlooked. Accordingly, this thesis addressed some of the influences on the evocation process.

Hypotheses and Main Findings

Variation in Evocation by Cue

The first proposition states that brand retrieval is a function of the cues that are present in the retrieval situation. Two more specific hypotheses that derived from this general proposition were tested in the brand evocation study reported in Chapter 4. In particular, it was anticipated that when asked to generate evoked sets, subjects would generate sets that differed depending on the situation cue (H1) or the benefit cue (H2) that was given at retrieval. The results clearly supported these hypotheses showing that evoked sets vary significantly depending on the cue provided at the time of retrieval.

This study extended research by Ratneshwar and Shocker (1991) that showed that evoked sets vary by the situation used as a cue. The brand evocation study showed that this principle extended to product-types other than snacks and to cue-types other than situations. From the point of view of theory, the implications are that the structure of consumer memory is not invariant. Roth and Shoben (1983) similarly showed the modification of categorical structure by the manipulation of contextual cues. In this thesis, no hypotheses about the "structure" of memory were tested; nevertheless, changes in the sets of "drinks," "snacks" and "restaurants" evoked depending on the contextual cue reinforces the observation by Roth and Shoben (1983) that the apparent "structure" of representations in memory is dependent on the node from which the spread of activation commences.

More interesting is that these results imply that consumers may be using goal-derived categories (Barsalou 1985). This is in contrast to the notion typically assumed by marketers that consumers generate evoked sets that are category specific as evidenced by the widespread use and advocacy for the category production paradigm (e.g., Alba et al. 1991). The evidence reported in this thesis clearly demonstrates that consumers are readily able to generate evoked sets for situations. It is thought that situations influence the evocation process is by activating a set of goals. Goals were considered to be benefits sought, and therefore, it was anticipated that cuing with benefits would similarly lead to the generation of evoked sets differing by cue; the brand evocation in response to benefit cues clearly proved this to be the case.

It was noteworthy that a few of the evoked sets that were generated were not significantly different from one another. However, it was also noted that the nonsignificant differences arose in comparisons of some evoked sets generated in response to situation cues versus some generated in response to benefit cues. It appears that the situation might be operating as an indirect cue; that is, the benefit cue and the situation cue gave rise to similar sets because the situation cue evoked the benefit cue. This was not testable and, of course, a reverse link (from benefit to situation) and/or a third variable presents an equally possible explanation, albeit less parsimonious in the current conceptual framework.

Measuring Brand Accessibility

The second proposition stated that the probability of brand retrieval depends on the strength of the associate (cue) to brand link. Accordingly, it was anticipated that different measures of brand retrieval (specifically, response time measures) ought to be related to brand evocation to the extent that each measured accessibility (H3). A brand verification measure based on response times similar to measures used by Schvaneveldt and Meyer (1973) and Fazio (1990) was examined. The hypothesis that evocation and verification are related was supported by the high correlation between the two, supporting the notion that brand retrieval is a function of the associative strength of the associate to brand link.

Interestingly, in the same way that Fazio has argued that "accessibility" of an attitude can play an important role in brand evaluation (see Fazio 1986), it might be similarly argued that brand accessibility may play an important role in brand retrieval (Fazio 1990; Farquhar et al. 1990). The importance of brand accessibility in brand evocation is somewhat obvious; a more accessible brand is more likely to be recalled than another. Interestingly, it seems feasible that the role of brand accessibility might be extendible to more stimulus-based choice situations such that more accessible brands are identified more readily, and are therefore more likely to be included in the set of brands to be considered. From this point of view, the brand verification response time measure would be of value to predicting accessibility of the brand in both stimulus-based and memory-based choice situations.

It is appears probable that the strength of the associative link is a fundamental property that can explain a number of measures of consumers' categories. For instance, some recent research has focused on typicality as a predictor of brand evocation (e.g., Ratneshwar and Shocker 1991; Ward and Loken 1986). However, it is unclear why "typicality" ought to predict evocation. It is suggested that a conceptual alternative is to consider brand accessibility as a determinant of both typicality and evocation. In effect, brand typicality may be considered a function of brand accessibility. The notion being suggested here is one of memory attributions as discussed by Jacoby et al. (1989). That is, a highly accessible brand is likely to be judged to be highly typical--the attribution to typicality being made on the basis of the associative strength.

Therefore, it is argued that all three measures--brand evocation, brand verification and typicality--are likely to be related. That is, in the same sense that the correlation of brand evocation and brand verification is thought to reflect a common property, similarly, the reported correlations between brand evocation and typicality (e.g., Nedungadi and Hutchinson 1985; Ratneshwar and Shocker 1991) suggest that they may have a common underlying process--rather than one causing the other. To confirm this, it would be necessary to show that brand verification and typicality are related, and ultimately, that all three constructs covary; that is, that manipulations of typicality or brand accessibility (i.e., evocation or verification) are related to the other measures.

One final observation to be made about the nature of evocation is the apparent complexity of this process. The categorization paradigm has long been held to be an appropriate model for understanding the formation of evoked sets. Recent literature (Graonic and Shocker 1992; Loken and Ward 1990) and this thesis have suggested that evoked sets may be considered more like goal-derived categories. However, aside from the differences in the cues for each of these sets, the relationship between members of evoked sets is confounded with the classification of taxonomic category versus goal-derived category. Although the notion of evoked sets typically assumes that the sets comprise alternatives, the notion of goal-derived can imply the generation of complements (e.g., "things to take on a camping trip," Barsalou 1985). Anecdotally at least, it appears that consumer's evoked sets may have members which represent substitutes as well as members which are complements.

Influence of Ad-Cue Interaction on Brand Retrieval

The major contribution of this thesis is in terms of the development of an understanding of brand awareness supported by tests reported in the main study. Although a number of papers (Alba and Hutchinson 1987; Alba et al. 1991) have considered the issue of brand awareness, most attention has been directed to the issue of memory in brand evaluation. In Chapter 3, a relatively comprehensive conceptualization of the role of memory in the brand evocation process was developed. One prediction from this line of thought was that brand awareness should be facilitated to the extent that there is a match between the conditions at encoding and retrieval.

The first hypothesis tested in the main study (H4) was the expectation that if a cue present at retrieval was also present at encoding, then brand accessibility would increase. The study itself was a relatively strict test of this hypothesis with virtually all elements of the encoding and the retrieval situation being different except for the cue. The "conditions" overlap in terms of one cue only. Nevertheless, there was an impressive facilitation in evocation of the brand in response to the cue with which it had been associated, but not in response to evocation of the same product-type coupled with a different cue.

Particularly interesting from a practical and a theoretical perspective is that much testing of advertising is probably inappropriate in that it provides a cue to the ad to test the effects of the ad on brand retrieval. In a test such as Burke's Day-After-Recall (see Zielske 1982), the respondent is asked to cast his/her mind back to a particular television program shown the previous day, and is then provided with successive cues to assist him/her to recall the target brand advertised. This tests for an episodic memory of the ad. To argue for the appropriateness of testing ads by providing ad exposure cues, one needs to argue that those same cues are salient in the choice situation[20].

In this thesis, a different approach was taken. First, preliminary research was conducted to identify the cues salient in choice situations; it is noteworthy that ads were very infrequently mentioned by subjects. In the main study, brands were linked in ads to some of these cues salient in at least some choice situations. Subsequently, in a test which *did not* explicitly refer to the ad exposures, a brand evocation measure in response to different cues was taken. While cues were provided at the retrieval time, and it is clear that those cues assisted retrieval, it is presumed that those cues were the types of cues that might be salient in at least some choice situations.

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[20] Keller (1987) shows that placing cues to the ads on the package facilitates retrieval of the ad and, more importantly, the information from the ad.

In terms of the kind of memory being measured, it is argued that what is important in brand choice is implicit memory rather than explicit memory (Jacoby 1988). That is, it is the memory that is used that needs to be measured, not the memory that the subject is able to recover when asked explicitly to do so. A comparison might be made with an example discussed by Jacoby and Kelley (1987) about the way in which people "remember" how to spell. Although people are probably unable to remember the episodes in which they learned to spell particular words, they are able to remember (by and large) how to spell the word. With sufficient cues to a particular episode in which a person learned a particular word, s/he might remember the occasion, the word being learned, etc. However, this is not necessarily predictive of whether or not s/he remembers how to spell the word.

In the same way that it is not necessary to consciously recollect the episode (or episodes) in which you learned how to spell a word, it is argued here that conscious recollection of the ad exposure is not necessary in order to "remember" (evoke) brands in a choice situation. The main study in this thesis showed that linking a benefit and a target brand facilitated subsequent brand retrieval. That is, the influence of the ads, mediated by "memory," was apparent whether or not the ad exposures were consciously remembered. Although no measure of conscious memory of the ad exposure was taken, it was apparent that in the course of the retrieval stage of the study, some subjects became aware of the link to the exposure stage. Even when these subjects were excluded, there was at least some evidence that the ads facilitated brand retrieval to the extent that a benefit cue included in that ad was salient at retrieval.

At a more global level, one of the important implications of the concepts developed in this thesis and arising from this research is that marketing efforts such as advertising may influence consumer decisions without the consumer's conscious awareness of that influence. In a sense, this call to consider the notion of a less involved consumer is not new (see Kassarjian 1978, 1986; c.f. Bettman 1979); however, it is different in that less cognitive involvement should not be taken to imply no cognitive processing. The concepts developed and tested here fit well within the information processing paradigm; as suggested by Alba et al. (1991), information processing should not ignore the complex processes that may be undertaken without conscious awareness (see also Janiszewski 1988).

Despite the evidence provided by the brand evocation data, there was almost no support for the hypothesized influence of facilitated response times in the brand verification task when the ad information and the retrieval cue matched. One possible reason for this is that the brand verification task may not have been sensitive to the manipulations. However, to the extent that both brand verification and brand evocation measure brand accessibility, if the manipulations are affecting accessibility, both would be expected to be influenced.

It seems possible that the verification measure is insensitive to the manipulation because the exposure to the ads primed the brand. That is, the verification measure, which is a priming measure, relies on the activation spreading from the prime (i.e., the cue) to the target brand, thereby facilitating the speed of verification of the brand. As has been noted, exposure to the ads (even an hour before the brand verification measure was taken) may have led to significant priming of the brand, which facilitated the verification of the brand and cues presented as primes in the trial. Support for this notion was seen in the faster response times of those who had seen the ads versus those who had not.

The second hypothesis tested in the main study (H5) was the expectation that the influence of repetition, a common manipulation of accessibility, would be contingent on the matching of conditions at encoding and retrieval. Surprisingly, the hypothesis was not supported. However, it is noteworthy that although there was no significant effect of repetition where there was a match in conditions, there was also no main effect of repetition. One possible explanation is that even a single exposure resulted in a level of accessibility equal to the level of accessibility gained by three exposures. This was surprising given the common notion that "effective frequency" is generally thought to fall somewhere between one and three exposures (Krugman 1972; Rossiter and Percy 1987). That is, the provision of a cue at retrieval increases brand accessibility so successfully as to reduce the "effective frequency" to one exposure.

However, this conclusion must be regarded with caution as each ad contained three repetitions of the cue-brand link. In this case, the level of the repetition could be viewed as three exposures versus nine, both of which exceed most estimates of "effective frequency" (Krugman 1972; Rossiter and Percy 1985). Alternatively, it can be argued that the "forced exposure" to the ads resulted in a reduction in the effective frequency; however, it seems somewhat more dubious as the subjects were asked to focus on evaluating the ads rather than the brands, so that the encoding of the brand and brand related information would be incidental. Furthermore, this manipulation is the one used in studies that show effects of repetition.

Influence of Ad-Cue Interaction on Brand Choice

The final hypothesis (H6) considered the influence of increasing accessibility on choice. As has been noted, one problem is that the measures, both presumed to be measuring brand accessibility, did not yield parallel results. Nevertheless, brand evocation was influenced, and an investigation of whether the manipulations of ad and cue affected choice could be undertaken. The results provided only weak support for the hypothesis; however, the weakness of the results was considered to be attributable to the low power of the test with so few people having chosen the target brands. It is important to note here that the use of real brands was necessitated by the requirement to not explicitly link the ad exposure and the brand retrieval stages of the study. Therefore, the appearance of any effect on choice at all is one that can be considered encouraging.

Although the (weak) effect of the manipulations on choice was attributed to the mediating effect of evocation, it was not possible to completely exclude the possibility that the effect of the interaction of ad with cue was mediated by evaluation. However, encouraging signs of the non-involvement of evaluation were seen in the fact that none of the ads affected brand evaluations except for one, and in that one instance, brand evaluation was reduced. There were ad effects reported on the brand evocation measure, and of course, ad by cue effects. Overall, the results from the choice measures suggest that an increase in evocation might translate into choice as was found by Nedungadi (1990) who increased evocation through a priming manipulation. A more powerful design is needed to test this proposition.

Marketing Implications

It has been suggested from the outset that one of the major contributions of this research is that it deepens our understanding of brand equity. Although it was clearly demonstrated that brand evocation is influenced by linking retrieval cues with the brand in ads, the transfer of this effect to brand choice was not clearly demonstrated. However, the possibility was definitely not eliminated, and as mentioned, Nedungadi (1987, 1991) has demonstrated that influences on the evocation set can affect choice without any influence on brand evaluation.

The exciting possibility offered by the concepts explored in this thesis relative to Nedungadi's work is that of affecting brand evocation (and so brand choice) for a more extended period of time. Nedungadi (1987) used primes (brands) which were presented in a task immediately before the evocation and choice tasks; in the "real world" of marketing ensuring that brand primes are presented at a time close enough to affect evocation and choice would be somewhat difficult. As has been noted, consumption situations are frequently out of reach to marketers, and purchase situations are crowded with many stimuli; ensuring exposure to the prime at the right place and the right time is difficult, and at best, likely to be only temporary.

In contrast, this study demonstrated that brand evocation can be affected by an ad seen in a situation removed from the retrieval situation. Within the retrieval situation, there was no explicit link to the prior ad exposure except for the provision of a cue. The cue, a benefit to which the brand had been linked in the ad, was presented without noting its presence in the earlier ad exposure situation. There would appear to be two ways in which this concept can be used, one which is tactical and one which is more strategic. In the first, marketers could ensure that cues to ads are provided in the consumer's retrieval environment to facilitate the evocation of the brand. This notion is very similar to that proposed by Keller (1987) suggesting that memory of brand-related information can be facilitated by the provision of cues to the ad in the choice situation. In effect, retrieval of the brand can be facilitated by cues earlier associated with the brand.

A more sustainable effect is likely from an alternative approach which seeks first to discover the cues salient in consumer choice environments and, subsequently, to link brands to those associates in ads. In effect, the marketer works backwards from the choice situation in the design of the ads rather than vice versa. This notion extends Baker's (1992) argument that marketers need to give more consideration to the relationship between the exposure situation and the retrieval situation. This thesis focuses on one particular route to brand awareness based on explicitly recognizing (and manipulating) the overlap in conditions at exposure and at choice. While memory is retained and the cues at retrieval remain salient for consumers, the ads will be influential in facilitating evocation of the target brand. It should be noted that in addition to being salient, it seems likely that cues selected should not strongly evoke other brands and should be "appropriate" for the brand. Both these variables may be found to moderate the success of ad-cue matching procedure that has been suggested here.

Two points about the current study which place caveats on the likely success of the more strategic approach proposed are that (1) cues were provided to subjects at retrieval, and (2) the time between ad exposure and choice was less than would be the case in reality. The first problem is one that is difficult to address as it is difficult to catch consumers when they have just the right set of cues operating. The second limitation is one that clearly needs to be examined. especially in light of its importance of the claim here that the effect may be longer lasting than that of a prime.

An interesting side note is that although the focus in this study was on brand accessibility, it should be apparent from the results reported in the measures of brand evocation that evoked sets tend to contain many product category-level alternatives as well as brands. An interesting option might be for companies interested in generating primary demand to associate the category to cues with which the brand is not currently associated. This seems to be the intention of the Florida Citrus Commission in the campaign encouraging consumption of orange juice at times other than breakfast; however, it is not clear that the chosen situations which do not already strongly evoke other alternatives. That is, there may be a problem of competititive interference (Burke and Srull 1988), and/or a problem of "appropriateness" (Day et al. 1979). The former may be overcome, while the latter may prove to be a strong barrier to success.

Aside from the implications for brand equity and longer term effects on brand memory, the research also has a number of implications for choice research, and in particular ad research. It has been pointed out that researchers typically make very little effort to separate the ad exposure from the ad retrieval situations (Baker 1991). This thesis suggests two main concerns with this procedure. First, when the encoding and retrieval situations are close together (as in many ad testing procedures) in the same room, with the same researcher and so forth, there is considerable overlap in the conditions at exposure and retrieval, which will result in the facilitation of retrieval of memory of the ad and its contents. Second, and arguably more important, is the dubious value of measuring explicit, episodic memory without any demonstration that this is the kind of memory used in brand choice. While this study did not did not successfully demonstrate that the memory measure taken was an appropriate measure of the memory used in choice, an attempt was made to show that the manipulations which affected brand evocation also affected choice. The evidence was not strong but was in the right direction, which is encouraging given the low numbers who chose the target brands.

Limitations and Future Research

As with most laboratory studies examining consumer behavior, the conditions in the main study were not particularly realistic. Even though subjects were asked to evaluate the ads (as opposed to the brands) in the ad exposure stage in order to simulate incidental encoding of brand information, the ad exposure was forced. With respect to the retrieval stage in the main study, the results were interpreted as showing a means by which cues salient at retrieval can become facilitators of brand evocation if they are incorporated in ads; however, the retrieval cues in this study were directly and explicitly provided to subjects. It is therefore necessary to demonstrate that cues supposedly salient at retrieval are indeed actually salient at retrieval and, perhaps more importantly, that they operate in the same manner as a visually presented cue word.

In an effort to ensure efficient data collection, subjects completed a brand verification task, an evocation task and an evaluation task in the retrieval stage. Although tests did not reveal any reactivity effects, a design with measurements taken between subjects would be preferable.

In particular, it seems probable that the number of retrieval tests did sensitize a number of individuals to the connection between the retrieval stage and the ostensibly separate encoding stage. In order to more clearly demonstrate the possibility of ad effects on brand retrieval being mediated by implicit memory, a design with less sensitization of subjects is needed.

Perhaps the greatest disappointment in this research was failure to clearly demonstrate an effect of matching ad-cue on brand choice. It has been suggested that a major limitation was the lack of power of the design, and so further research is clearly needed to determine whether or not the influence on brand retrieval translates to choice as hypothesized. However, given the comments above suggesting a need for more realistic manipulations and a between subjects measures design to reduce sensitization, it appears that power will need to be achieved by adding subjects. Given that the effect of matching ad and cue on retrieval was demonstrated, an effort should be undertaken in further research to more clearly eliminate the possibility of an interactive influence of ad and cue on brand evaluation.

Despite only weak results, the directional nature of the results appeared to be quite clear. The implications for businesses are significant in the sense that even small gains in terms of market share points can represent millions in sales in large market blocks such as North America, Europe and South-East Asia. Furthermore, other studies provide support to the notion that increased accessibility will result in an increase in choice. Nedungadi (1990) demonstrated that facilitated brand retrieval using a priming task. This increase in accessibility subsequently contributed to increased choice independent of any influence on evaluation. Similarly, in this study, evaluations did not appear to change although a measurement of evaluation for each combination of ad and cue would be needed to eliminate the competing hypothesis of an effect of matching ad-cue on choice mediated by evaluation could be eliminated in further research.

In addition to research addressing limitations of these studies, the results suggested some interesting research opportunities. Further research is needed to investigate the nature of the cues that are likely to be operating at retrieval. The preliminary studies suggest that further investigation of the process by which situations and cues operate would appear to be worthwhile. For instance, the notion of indirect and direct cuing has been discussed, but there was no evidence that these two distinct processes existed. One possible route to investigating this possibility would be to further investigate response time measures. If a suitable measure can be found, it might be possible to create direct and indirect links to a brand and compare response time measures. It would be anticipated that indirect measures should show greater response times than a link that was direct from the cue to the brand. The need for further research into the nature and the operation of retrieval cues has been highlighted recently by a number of researchers (Graonic and Shocker 1992; Holden 1992).

The failure of repetition to achieve any increment in brand awareness or brand choice would appear to be worthy of further consideration. It was suggested that the provision of a cue may be facilitating retrieval by reducing the threshold of effective frequency. Although studies in which manipulations of repetition would need to be examined further to establish the differences in the testing procedures from the ones use here, testing retrieval in response to a product category cue versus a product-type cue coupled with a benefit cue may reveal the difference. The expectation would be that retrieval in response to the product category cue would show effects of repetition while the benefit cue would not. The reasoning would be that the product category (which is not explicitly provided in ad) is activated as an associate at retrieval only by inference and so is not strongly developed as a cue to retrieval of the brand.

Finally, there are a number of potentially researchable issues arising from the second proposition that brand evocation is a function of associative strength from the associate to the brand. First, it would be useful to demonstrate that the associative strength from the associate to the brand is not necessarily equal to the strength of the brand-to-associate link. Such a demonstration might suggest two alternative paths, one from the associate to the brand which is important in brand evocation, and the other from the brand to the associate which is important in brand evaluation. In addition, the weaker than might be expected correlations between the brand evocation and verification, coupled with the effect of the ad-cue manipulation on brand evocation but not verification, suggests that the measurement of brand accessibility should be considered further. In particular, it would of practical use to find a measure of brand accessibility that can measure the accessibility of unevoked brands, and of theoretical value to better understand the differences among various measures of brand retrieval.

Conclusion

The research reported here provides some support for the conceptualization of brand evocation (awareness in memory-based brand retrieval situations) as an associative network with many associates having the potential to cue a brand. Furthermore, the research has some particularly important implications for the measurement and management of brand awareness. The importance of awareness as a component in the choice process has been recognized for a long time; for example the power of awareness measures in predicting choice (Axelrod 1968; Haley and Case 1979). Nevertheless, the concept seems to be one that has been neglected and even overlooked in our models of choice.

Brand choice is posited in this thesis to be a basic behavioral determinant of brand equity at the consumer level. This coupled with the fact that brand awareness has been recognized as having a role in brand equity, the implications of further examining brand awareness are far reaching. To the extent that a brand is evoked in choice situations, we can attribute at least a partial role to awareness. To the extent that the brand is consistently evoked in that situation due to associations formed in memory and is thus chosen more frequently than other brands, we can say that awareness is making a contribution to equity at the consumer level.

Most managers and academics have a fairly limited conceptualization of brand awareness; however, the complexity and implications suggested by the conceptualization in this thesis suggest that there is a great deal of promise in turning more attention to brand awareness.

APPENDIX A
BRAND EVOCATION MEASURE

The following questionnaire is one example of those used in the brand recall task in Study 2. Subjects generated evoked sets for each of the three product-types, drinks, snacks and restaurants. The cues presented on each page above the mention of the product-type were chosen from a set of five cues for each product-type. The order of the product-type and cues used was randomized across questionnaires. See the text for details.

SUBJECT: __________ SESSION: __________

AGE: _________ SEX (circle one): F M

In the following few pages, you will be completing what is known as a word association task. The word association task measures what thoughts first come to mind in response to a cue-word.

As marketers, we are interested in the PRODUCTS that come to mind in response to various cue-words. On each page, you will be given two sets of words at the top of the page. The top line gives the cue-word(s), and the second line tells you what products we are interested in. Your first task is to circle the highlighted cue-word(s) and the product.

Then, you will be given 20 seconds to write down the first products that come to mind. We have allowed for 7 products, but you do not need to fill them all. You will complete 10 word associations.

EXCITING

What MAGAZINES come to mind?

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

RELAXING

What DRINKS come to mind?

1. ____________________

2. ____________________

3. ____________________

4. ____________________

5. ____________________

6. ____________________

7. ____________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

FILLING

What SNACKS come to mind?

1. ____

2. ____

3. ____

4. ____

5. ____

6. ____

7. ____

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

DIFFERENT

What RESTAURANTS come to mind?

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

6. ______________________________

7. ______________________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

APPENDIX B
ADVERTISING STIMULI

Advertisement 1

F1: I missed my lunch today, so I try to think of something to eat that's. . .

F2: Filling? And when I think of something filling, I think of . . .

F3: Pop-Tarts!

F4:

F5: It's the end of a long, tiring day, so I try to think of something . . .

F6: Filling? And when I think of something filling, I think of . . .

F7: Pop-Tarts!

F8:

F9: I'm sitting watching the TV, so I try to think of something . . .

F10: Filling? And when I think of something filling, I think of . . .

F11: Pop-Tarts!

F12: For something filling, think of Pop-Tarts.

Advertisement 2

F1: I'm on my way to class, so I try to think of something to eat that's . . .

F2: Quick? And when I think of something quick, I think of . . .

F3: Pop-Tarts!

F4:

F5: Oh, no! I woke up late, so I try to think of something . . .

F6: Quick? And when I think of something quick, I think of . . .

F7: Pop-Tarts!

F8:

F9: I'm working furiously on an assignment that's due, so I try to think of something . . .

F10: Quick? And when I think of something quick, I think of . . .

F11: Pop-Tarts!

F12: For something quick, think of Pop-Tarts.

Advertisement 3

F1: It's a Saturday evening with nothing to do, so I try to think of somewhere to eat that's . . .

F2: Different? And when I think of somewhere different, I think of . . .

F3: Cafe Gardens!

F4:

F5: My family has come to town to visit, so I try to think of somewhere . . .

F6: Different? And when I think of somewhere different, I think of . . .

F7: Cafe Gardens!

F8:

F9: It's a slow Sunday with nothing go on, so I try to think of somewhere . . .

F10: Different? And when I think of somewhere different, I think of . . .

F11: Cafe Gardens!

F12: For somewhere different, think of Cafe Gardens.

Advertisement 4

F1: It's my workout day, so I try to think of somewhere to eat that's. . .

F2: Healthy? And when I think of somewhere healthy, I think of . . .

F3: Cafe Gardens!

F4:

F5: I had a pretty heavy breakfast this morning, so I try to think of somewhere . . .

F6: Healthy? And when I think of somewhere healthy, I think of . . .

F7: Cafe Gardens!

F8:

F9: I'm having lunch with my sports partner, so I try to think of somewhere . . .

F10: Healthy? And when I think of somewhere healthy, I think of . . .

F11: Cafe Gardens!

F12: For somewhere healthy, think of Cafe Gardens.

APPENDIX C
VERIFICATION STIMULUS PAIRS

The stimulus pairs, in the order in which they appeared to subjects exposed to this version of the verification measure, are presented in the following. The positions of the target pairs are identified by an asterisk (*). The order of the target pairs was varied across eight versions as detailed in the text.

Block 1:

1 Addictive\Doritos
2 Lemon soda\Sprite
3 Resting\Anlort
4 Discount Store\K-Mart
5 Lemon\Sprite
6 Rolsane\Anlort
7 Anieslap\Gatorade
8* Altrander\Pop-Tarts
9 Logrort\Listerine
10 Distant\K-Mart
11 Salsena\Sprite
12 Easy\Snickers
13 Mall\Sears
14 Service\Saufrattia
15 Bookbag\Dosna
16* Different\Cafe Gardens
17 Medicinal\Listerine
18 Expensive\Jiffy
19 Soap\Hafters
20 Boutique\Dosna

Block 2:

21 Mouthwash\Listerine
22 Socializing\Dentyne
23* Filling\Pop-Tarts
24 Brushing\Colgate
25 Eyesten\Sears
26 Fast\Snickers
27 Candy Bar\Snickers
28* Restaurant Bar\Cafe Gardens
29 Nearby\Jiffy
30 Soothing\Coke
31 Neltorne\Chaucers
32 Special\Melting Pot
33 Cheap\K-Mart
34 Sports Drink\Gatorade
35 Fluoride\Colgate
36 Nemstran\Colgate
37* Quick\Pop-Tarts
38 Cheese\Anlort
39 Norlon\Jiffy
40 Fondue\Melting Pot

Block 3:

41 Chinese Restaurant\Saufrattia
42 Stand\Dosna
43 Sterilizing\Listerine
44 Palsena\Coke
45 Friendly\Saufrattia
46 Clean\Blainton
47 Cola\Coke
48 Funny\Anlort
49 Stylish\Blainton
50 parsley\blainton
51 Thirst Quenching\Gatorade
52* Grontlen\Cafe Gardens
53 Partying\Gatorade
54 Convenience Store\Jiffy
55 Gorten\Dosna
56 Pleasing\Chaucers
57 Corn Chips\Doritos
58* Toaster Pastries\Pop-Tarts
59 Gortland\Melting Pot
60 Kortlend\Saufrattia

Block 4:

61 Toothpaste\Colgate

62 Cruel\Hafters

63 Crunchy\Doritos

64 Gum\Dentyne

65 Ready\Hafters

66 Tradendel\Hafters

67 Frelanker\Doritos

68* Healthy\Cafe Gardens

69 Refreshing\Dentyne

70 Dalylou\Blainton

71 Danterder\Snickers

72 Interesting\Chaucers

73 Relaxing\Coke

74 Trendy\Melting Pot

75 Vegetarian\Chaucers

76 Jortlon\Dentyne

77 Reputation\Sears

78 Department Store\Sears

79 Vorlon\K-Mart

80 Diet\Sprite

APPENDIX D
BRAND EVOCATION - MAIN STUDY

The following questionnaire is one of four versions used in the brand recall task in Study 3. The evoked set measures that were important in this questionnaire were the two for snacks and the two for restaurants. The order in which these appeared and the order of the cues was counterbalanced. See the text for details.

SUBJECT: __________ SESSION: __________

AGE: __________ SEX (circle one): F M

In the following few pages, you will be completing what is known as a word association task. The word association task measures what thoughts first come to mind in response to a cue-word.

As marketers, we are interested in the PRODUCTS that come to mind in response to various cue-words. On each page, you will be given two sets of words at the top of the page. The top line gives the cue-word(s), and the second line tells you what products we are interested in. Your first task is to circle the highlighted cue-word(s) and the product.

Then, you will be given 20 seconds to write down the first products that come to mind. We have allowed for 7 products, but you do not need to fill them all. You will complete 10 word associations.

EXCITING

What MAGAZINES come to mind?

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
6. ______________________________
7. ______________________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

EXCITING

What MAGAZINES come to mind?

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

6. ______________________________

7. ______________________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

RELAXING

What DRINKS come to mind?

1. ____________________

2. ____________________

3. ____________________

4. ____________________

5. ____________________

6. ____________________

7. ____________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

QUICK

What SNACKS come to mind?

1. ____________________

2. ____________________

3. ____________________

4. ____________________

5. ____________________

6. ____________________

7. ____________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

NEARBY

What STORES come to mind?

1. ____

2. ____

3. ____

4. ____

5. ____

6. ____

7. ____

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

DIFFERENT

What RESTAURANTS come to mind?

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

6. ______________________________

7. ______________________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

REFRESHING

What BREATH FRESHENERS come to mind?

1. ____________________

2. ____________________

3. ____________________

4. ____________________

5. ____________________

6. ____________________

7. ____________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

CHEAP

What STORES come to mind?

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

6. ______________________________

7. ______________________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

HEALTHY

What RESTAURANTS come to mind?

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

6. ______________________________

7. ______________________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

THIRST QUENCHING

What DRINKS come to mind?

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

6. ______________________________

7. ______________________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

FILLING

What SNACKS come to mind?

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

5. ______________________________

6. ______________________________

7. ______________________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

SOCIALIZING

What BREATH FRESHENERS come to mind?

1. ____________________

2. ____________________

3. ____________________

4. ____________________

5. ____________________

6. ____________________

7. ____________________

DO NOT TURN THE PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

Now, we would like you to be totally specific by listing the BRANDS that come to mind given the cue-word(s).

Please go back through each numbered line where you have listed your responses and wherever you were referring to a category of products, please list the first three BRANDS that come to mind within that category, given the cue-word(s) listed on the first line of that page. List the brands next to the category label you used.

Wherever you have already listed brands, you do not need to do anything more.

As an example, we have shown what you need to do in the following.

EXCITING

What MAGAZINES come to mind?

1. ____________________
2. ____________________
3. ____________________
4. ____________________
5. ____________________
6. ____________________
7. ____________________

Do this task at your own speed.

APPENDIX E
EVALUATION OF ADVERTISEMENTS

The instructions to subjects and an example of the scales for evaluating the advertisements follows. The instructions were printed on the front of the questionnaire and were read out loud by the experimenter as the subjects followed along. Four advertisement evaluation forms appeared after the page of instructions; one form for each of the two experimental advertisements and one form for each of the two filler advertisements.

In the first part of this study, you will be asked to evaluate a set of animatics. As finished commercials are very expensive to produce, advertising agencies use animatics to assess the likely success of an advertising campaign. An animatic is a "prototype" commercial made up of a series of drawings intended to suggest what the finished ad will look like when produced. Each animatic is the length of a regular commercial.

You will be asked to say whether you like or dislike each animatic, or more simply, to state whether you judge them to be good or bad. You will report your evaluation using a set of scales.

You should direct any questions that you have to the experimenter at this time.

ANIMATIC : ____________________________

Each of the following scales presents a pair of opposite evaluations (i.e., good -- bad). On each scale, the closer you place a check to one of the endpoints, the better it reflects your evaluation or liking of the animatic. Consider each pair of evaluative terms carefull, and note that positive evaluations sometimes appear on the left and sometimes on the right.

This animatic is good |____|____|____|____|____|____|____| This animatic is bad

I dislike this animatic |____|____|____|____|____|____|____| I like this animatic

This animatic is satisfactory |____|____|____|____|____|____|____| This animatic is unsatisfactory

I am unfavorable to this animatic |____|____|____|____|____|____|____| I am favorable to this animatic

This animatic is interesting |____|____|____|____|____|____|____| This animatic is uninteresting

This animatic is valuable |____|____|____|____|____|____|____| This animatic is worthless

APPENDIX F
BRAND EVALUATION AND AWARENESS OF PURPOSE

Please could you indicate your rating of each of the following brands on the three scales provided.

COKE (as in Coca Cola):

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

MILKY WAY:

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

JIFFY (as in convenience store):

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

BENNIGANS:

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

LISTERINE:

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

GATORADE:

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

POP-TARTS:

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

K-MART:

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

CAFE GARDENS:

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

DENTYNE:

Bad	1	2	3	4	5	Good
Dislike	1	2	3	4	5	Like
Low quality	1	2	3	4	5	High quality

At this point, the study is virtually complete and I thank you for your time and effort.

In order to improve our procedure, we are interested in your evaluation of the clarity of the instructions given in this study. We are also interested in your *honest* perception of what was the purpose or goal of this study.

1. Summarize below what you believe was the purpose of the second study you participated in today.

2a. Did you think that any of your responses in this second study were influenced in any way by the first study you completed today? Yes / No

2b. (If "Yes" in Q2a) When did you become aware of an influence of the first study on your responses in this second study?

only now that you mention it	1
during the "brand rating" task	2
during the "word association" or "recall" task	2
during the computer task	3
other (give details:) ______________________________	4

2c. (If "Yes" in Q2a) How do you think that your responses were influenced (Be specific)?

3. Any other comments?

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BIOGRAPHICAL SKETCH

Most biographical sketches end with the person saying that s/he has a family, a lovable hairy sheepdog and a home in the country; mine starts that way. Raised on a sheep farm in the south-west of Australia, my first journey into academics was undertaken at the University of Western Australia where I completed a Bachelor of Science degree with Honours.

Resisting the urgings of my lecturers to continue my studies, I worked for a year and a half in the public service followed by two enormously satisfying years in a small marketing research agency. On the advice of my mentor in the research agency, I journeyed to North America to complete an M.B.A. at the University of Toronto.

I then was drawn back to Australia to work with an exciting young venture in brewing from which I spun off a marketing and research consultancy. Business boomed, but I had a prior commitment to return to North America. This time to the University of Florida to undertake my Ph.D.

The four years at the University of Florida (less one semester back at the University of Toronto) were particularly enjoyable. I regret that I have forgotten so much of the fascinating material I learned; nevertheless, the stimulation of that environment is something that I shall not forget.

I now work at ESSEC and live in the city of Paris. I have no wife and no children. However, due to social pressure, I may get a dog!

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Richard J. Lutz

Richard J. Lutz, Chairman
Professor of Marketing

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Alan G. Sawyer

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Professor of Marketing

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Ira Fischler
Professor of Psychology

This dissertation was submitted to the Graduate Faculty of the Department of Marketing in the College of Business Administration and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December 1992

Dean, Graduate School

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